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ABSTRACT

This book, the sixth in a series of longitudinal studies initiated by the Youth in Transition Project, examines change and stability and educational and occupational attainments of young men. During the eight year study, nationally representative samples of over 2,000 young men were surveyed and their experiences from 10th grade through five years beyond high school graduation were traced. Objectives were to: (1) explore effects of dropping out of high school by comparing occupational attainments of dropouts with those of graduates, (2) determine the degree to which 10th grade measures can predict educational and occupational attainments, (3) assess the role of educational attainment as compared with the role of family background and intellectual ability, and (4) determine the impacts of post-high school experiences and environments on values, attitudes, and behaviors. The first portion of the book emphasizes factors which precede and/or contribute to educational and occupational attainment. Tenth grade measures of background, ability, educational experiences, occupational outcomes, and job satisfaction are examined. The second portion examines change and stability through a variety of dimensions measured repeatedly from 1966 to 1974. Changes in self-esteem, motives, affective states, values, and views on social issues are analyzed. Results indicate that differences are present before exposure to different environments and experiences; individuals who are initially different tend to seek out different situations. A detailed summary of results and technical information about the research are included. (KC)

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Youth in Transition

VOLUME VI

Adolescence to Adulthood — Change and Stability in the Lives of Young Men

JERALD G. BACHMAN
PATRICK M. O'MALLEY
JEROME JOHNSTON

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To our parents

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FOREWORD

Like most other human virtues, the conduct of longitudinal studies in the social sciences has more advocates than practitioners. The circumstances are extenuating, however; long-term studies, especially of representative population samples, are expensive to support, difficult to manage, and complicated to analyze. To those threatening characteristics must be added the greatest threat of all: longitudinal studies, by definition, take time. The longevity of academics is legendary, but even research workers who live up to the legend cannot expect to complete many decade-long projects in the course of a career.

For all these reasons, we particularly appreciate those of our colleagues who undertake such research designs and carry them successfully to completion. Jerald Bachman and his colleagues have done just that for more than a decade. In 1966 they developed a probability sample of high schools throughout the United States and created a panel of more than 2,000 boys from the entering classes of those schools. For eight years thereafter they maintained contact with those young men, and in a series of data collections followed their movements along several paths—dropout or graduation, military service or civilian life, college or labor market, employment or unemployment.

The great strength of longitudinal research designs is their dynamic quality. Individual and aggregative changes over time are documented directly instead of being inferred from cross-sectional differences between groups. All problems of causal inference are not thereby solved, of course, but many are eased. These were particularly important considerations in the design of the Youth in Transition research because of the failure of earlier cross-sectional studies to find "school effects"—differences in student outcomes that could be plausibly attributed to the differential quality of high schools rather than some earlier characteristic of individual endowment or social advantage. The "Coleman Report," which first delivered that unwelcome message about schools to the public, generated considerable surprise, disappointment, and disbelief.

The findings of Bachman and his colleagues confirm these earlier results and do a great deal to explain them, counter-intuitive though they may be. The explanation involves some characteristics of high schools themselves. The thrust of public education in the United States has been toward similarity rather than differentiation among secondary schools. Moreover, we tend to treat high school graduates similarly regardless of the school from which they come; the high school graduate who moves into the labor market or applies for admission to college will be judged on many bases, but the name of the high school is not likely to be among them. The main explanation for the lack of differential high school effects, however, is the importance of earlier factors. The importance of those factors seems to me to be the central theme of this book and several of the monographs that preceded it. For example, students who do well in high school and go on to college have values and attitudes different from those who do poorly, and high schools differ considerably in the proportions of such students; but these differentiating student characteristics were with them before they entered high school. Similarly, schools differ in the proportion of students who drop out, but the dropouts carried the handicaps of low socioeconomic background and early performance deficits as they entered the tenth grade. The high school experience seems neither to exacerbate nor to repair the effects of such factors. For me the inference is to start earlier, both for purposes of explanation and for purposes of change.

Every longitudinal study deals with a unique bit of social history, a fact that research investigators usually encounter as an obstacle in the path to timeless generalizations. The years of the present study of course present such problems of generalization, but they are of special interest as well. The young men who entered high school in 1966 were of the Vietnam War generation. Their high school years saw the eruption of drug use, from marijuana to heroin. They graduated or moved without diplomas into the bewildering economic world of great affluence, great unemployment, and great inflation. They, who had grown up accustomed to continuing nuclear danger, came to adolescence at a time when other dangers were becoming apparent—shortages of energy and superabundance of pollutants, for example. The descriptive value of this research comes partly

Three of the set of eight monographs and special reports from the Youth in Transition study deal specifically with the impact of such events: *Youth in Transition, Volume V: Young Men and Military Service; Youth Look at National Problems; Drugs and American Youth.* The other substantive monographs are concerned with aspects of education and adolescence that are more likely to hold true for many times and places. And the methodological contributions from the study will be of continuing use to social scientists who decide that the longitudinal game is worth the candle. May their tribe increase!

I have referred to this book as the last in a series, but latest would have been a better word, for at least two reasons. Many of the data of this research are appropriately archived and are available to interested scholars, who are likely to continue to publish from this source. There is also the tempting possibility of returning to the members of the original panel, perhaps 10 years after high school, to learn more of the change and stability in their lives.

Those are future possibilities, however; my purpose in this foreword is to offer some appreciation for past accomplishments and commend them to readers. I do so with pleasure.

Robert L. Kahn
Program Director
Survey Research Center

PREFACE

This book is the sixth in a series of monographs documenting the Youth in Transition project, a longitudinal study of young men conducted by the Survey Research Center. Primary support for this analysis has come from the National Institute of Education, with additional funds provided by the Special Action Office for Drug Abuse Prevention. Earlier stages of the research were supported primarily by the Office of Education, with additional funding from the Department of Labor, the Department of Defense, and the W. T. Grant Foundation.

The Youth in Transition project began as an exploration of the effects of social environments, with special emphasis on the impacts of school and work environments. This monograph summarizes our findings over an eight-year longitudinal span that includes high school and five years beyond. We have documented a number of differences between those who drop out of high school and those who graduate, between those who complete college and those who do not, between the employed and the unemployed, between those with higher and lower status jobs, and between those who did and did not marry during the first few years after high school. In some cases the differences appear to reflect the impacts of the various social environments and experiences listed above. More often, however, it appears that such differences were actually present earlier, before the exposure to different environments and experiences occurred. Thus one of the themes in this book is change and stability, with much of the emphasis on stable differences among individuals who seek out and experience different social environments.

Another closely related theme has to do with the causes and consequences of educational attainment. In this respect Volume VI represents an extension of the issues raised in Volume III of this series, *Dropping*

Out—Problem or Symptom? Now, instead of dealing with events one year beyond high school, our longitudinal span extends to five years beyond high school. This means that we have a much more complete measure of educational attainment. More important, we have measures of outcomes which extend further into early adulthood.

Our findings concerning the impact of educational experiences have not been as simple and straightforward as we might have wished, nor does our research yield clear evidence that certain types or amounts of education are distinctly better than others. We have grappled with these complex findings and their interpretation in our final chapter. Our conclusions and proposals for change are not fundamentally different from those introduced in Volume III; however, we think the most recent data and analyses have provided the occasion to sharpen and extend those conclusions and proposals.

A point made in the Preface to Volume III is equally true here. Throughout the Youth in Transition reporting we have argued that theoretical and practical aims can be mutually facilitating in social research. The work reported here was conducted with both aims in mind, and we have tried to reflect both practical and scientific emphases in our style of reporting. We have included the detailed data and statistical relationships that are necessary for the scientific reader, but we also have tried to keep technicalities in the background and display our findings in ways that are meaningful to a broader audience. We hope we have done justice to both levels of reporting.

Guidelines for Using this Book

Just as we have tried to write with several levels of readership in mind, so also have we tried to organize this book to suit the needs of both comprehensive and selective readers. We recognize that the users of research monographs are often selective, and with that in mind we have provided a relatively brief summary of our findings in the first part of the final chapter, as well as a fairly detailed index. For both comprehensive and selective readers, a brief overview of the organization of the book may be helpful.

Chapter 1 provides an introduction and a description of the study design, sample, and data collections. It also provides a very brief first look at our cohort of young men five years beyond high school.

Chapters 2, 3, and 4 comprise the first of two major parts of the book. The emphasis in this part is upon those factors which precede, and in many respects contribute to, different levels of educational and occupational attainment. In Chapter 2 educational attainment is treated as an outcome variable; an extensive set of tenth-grade measures, including background, ability, educational experiences, and related attitudes, are all examined as predictors of the amount of education attained by young men. In Chapter 3 the focus moves to occupational outcomes, including job status, employment (versus unemployment), and wage rates; the predictors include background, ability, and related measures, plus educational attainment. Chapter 4 deals with the more subjective, dimension of job satisfaction, and notes how it is influenced by educational attainment as well as various job characteristics.

The second major portion of the book, contained in Chapters 5 through 9, deals with a variety of dimensions measured repeatedly between 1966 (tenth grade) and 1974 (five years beyond high school). For each dimension or set of dimensions, the analysis deals with whether different environments and experiences during the late teens and early twenties are linked to either stable differences between groups, or different patterns of change, or perhaps a bit of both. Chapter 5 highlights change along one particularly interesting dimension, self-esteem, with special attention devoted to the effects of educational and occupational attainments. This chapter also introduces, in a specific context, some of the complexities of analysis and interpretation that recur throughout the next several chapters. Chapter 6 spells out the rationale and procedures for analyzing changes as a function of various social environments and experiences. In Chapter 7 these procedures are applied to motives, affective states, values, and views on social issues. Chapter 8 deals with changes in job attitudes and aspirations. Chapter 9 focuses on trends in delinquency and drug use.

Chapter 10 provides an overview of the findings, a discussion of the various ways in which educational attainment may be linked to occupational success, and a series of observations about possible policy implications of this and other research dealing with educational attainment.

A number of appendixes have been provided, primarily for the reader concerned with the more technical aspects of the research. Appendix A provides operational definitions of each variable. Appendixes B, C, and D report on sampling, panel biases, and estimates of the population dropout rate. Appendix E provides tabular data underlying the extensive array of figures presented in the text. Appendix F presents stability estimates for most of the measures reported in Chapters 5 through 9.

Relationship to Earlier Youth in Transition Reports

Any reader who compares this volume closely with earlier reports, particularly Volumes II and III and also the special report on *The Transition from High School to Work*, will see many consistencies in analysis and reporting. This is scarcely surprising since, although the measures and the longitudinal span have been expanded considerably, the basic approach and logic of analysis for this volume is quite close to that employed in Volume III. Chapter 2 of this volume covers much the same topics as Chapters 3 through 6 of Volume III (but, as the chapter assignments suggest, the treatment herein is less detailed). Chapters 3 and 4 of this volume treat the same issues as were included in Chapter 8 of Volume III. And Chapters 5 through 9 of this volume provide an expanded analysis of the topics included in Chapter 7 of Volume III.

A close comparison of this volume with Volume III would also reveal some important differences in our conclusions as well as in our analysis approach. We have relied more heavily on multiple regression analysis and the logic of path analysis in the present volume, and that contrasts somewhat with our earlier work. We also have found that the high rates of unemployment among dropouts continue five years beyond high school, and this level of unemployment is less readily attributable to prior differences in background and ability than our earlier findings had suggested.

Given the fact that Volume VI is in some respects a very extensive "update" of Volume III, we had to decide how to handle the inevitable overlap between the two volumes. We could comment frequently upon the extent to which the present findings did or did not match our earlier results; but that seemed an unnecessary distraction except where a comparison with Volume III seemed particularly noteworthy. Another possibility was to view this volume rather narrowly as an extension or companion to our earlier works, thus requiring the thorough reader to refer frequently to Volume III and also Volume II. Since this volume is part of a series, that approach seemed acceptable; but from a reader's standpoint it seemed less than desirable. An alternative approach, and the one which we eventually decided upon, was to design Volume VI to stand more or less on its own. Rather than require the reader to rely on the earlier volumes for descriptions of variables or rationales, we have repeated such material—often in abbreviated form. In some respects, then, this volume supersedes Volume III, because it covers much of the same material but uses a substantially extended data base. The most important respect in which this work does not replicate Volume III is the extensive emphasis on high school dropouts. "The dropout problem" was the central focus of Volume III, whereas here the dropouts simply represent one end of the continuum of educational attainment. Accordingly, Volume III will continue to be of some use to those with a special interest in the high school dropout issue.

A special report from this project, *The Transition from High School to Work*, looked at the determinants of job attainment measured one year after high school. That report had to ignore those members of the panel who continued their education beyond high school, and for the rest of the panel members the report relied heavily on the initial post-high school job experience as an indicator of potential job attainment. As with Volume III, some of our conclusions in that report have been modified in the light of additional data collected four years later.

Opportunities for Further Analysis of These Data

Among problems of a longitudinal study involving a wide range of measurement areas is the very richness of the data. It simply is not possible to carry out and report all, or even most, of the interesting analyses that the data permit. In the present volume, for example, we recognized that we could not sustain the detailed level of longitudinal analysis applied to the self-esteem data in Chapter 5, and in Chapter 6 we spelled out an analysis strategy that left open the possibility that some readers would want to go beyond our own exploration of the interrelationships in the data. Some colleagues who reviewed an earlier draft of this volume expressed an interest specifically in further multivariate analyses, particularly in the later chapters. Our preference, however, has been to take the least complicated approach which, in our view, will provide an insight into the major message the data reveal. In a number of instances we carried out more complex multivariate analyses only to decide that they did not change our conclusions and thus did not warrant the additional complication of reporting them.

But we recognize that some may wish to pursue our analyses further, or undertake analyses different than those presented here. For those who wish to conduct further correlational analyses with the dimensions reported here, a large (199 variable) product-moment correlation matrix is available on request from the authors, or as Appendix G in an earlier version of this report (O'Malley, Bachman, and Johnston, 1977; distributed as Document No. ED 136 007 from the ERIC Document Reproduction Service, P.O. Box 190, Arlington, Virginia 22210).

In addition, copies of some of our data tapes may be obtained for further analysis by writing to the Inter-university Consortium for Political and Social Research at the Institute for Social Research (Box 1248, Ann Arbor, Michigan 48106). Most of the data included herein have been archived, or soon will be. A number of investigators have already made use of this resource, and we hope many others will be interested in doing so.

Acknowledgements

Quite a number of individuals have served in one capacity or another on the staff of the Youth in Transition project. All are acknowledged in the listing below. Many others at the Institute have helped to collect and analyze the data reported here. Thanks are due to the members of the Sampling, Field, and Coding Sections, and the Computer Services Facility. The data computations for this report employed the OSIRIS computer software system which was jointly developed by the component centers of the Institute for Social Research, using funds from the National Science Foundation, the Inter-university Consortium for Political and Social Research, and other sources.

We appreciate the work of Douglas Truax, Alice Preketes, and Linda Stafford in editing this volume and arranging its publication. We also value the contributions of Willard Rodgers and Greg Duncan who read and commented extensively on an earlier version of the manuscript.

When the project began in 1965, Jerald Bachman and Robert Kahn were co-principal investigators. Since that time Bob Kahn has been involved in a wide range of research activities and administrative responsibilities. He has, nevertheless, maintained an interest and involvement throughout the life-span of this project. His many contributions, including the kind words in the Foreword to this volume, are deeply appreciated.

Several other colleagues have made major professional contributions to the project over a period of some years. Martha Mednick, Terrence Davidson, and Lloyd Johnston have given much in the way of hard and creative work. It has been a pleasure to collaborate with them.

Starting such a list of special contributions is much easier than stopping. Certainly each of those listed below has made special contributions to the project. Perhaps it is best to conclude by extending gratitude and appreciation to the principals and instructional staffs of nearly a hundred schools, and to several thousand young men—the people who so generously provided the data for the Youth in Transition project.

Youth in Transition Project Staff (Past and Present)

Gayle Ackley
Donna Ando
Allison Arscott
Jerald Bachman
Ellen Berger
Joy Bingham
Lynn Bozoki
Janet Bumpass
Robert Cope
Diane Davidson
Terrence Davidson
John French, Jr.
Regina Gerstman
Swayzer Green
Penni Holt
Sally Iman
Mary Jacobs
Jerome Johnston
Joseph Johnston, Jr.
Lloyd Johnston

Robert Kahn
Rita Lamendella
Judith Long
Martha Mednick
Haydee Navarro
Roberta Niaki
Guttorm Norstebo
Patrick O'Malley
Karen Paige
Janice Plotkin
Philip Rappaport
Joel Raynor
Willard Rodgers
Susan Shapiro
Claire Taylor
Barbara Thomas
Elizabeth van Duinen
Patricia Veerkamp
Ilona Wirtanen

Chapter 1

INTRODUCTION

> Adolescence is a time of change, a time of transition. It is not only a time of physical maturation, but a time of psychological development. During these sometimes turbulent years, attitudes, aspirations, and self-concept are especially sensitive to many stimuli and are subject to both dramatic and subtle changes that are crucial in shaping the life of the individual. Decisions are made or deferred, actions are taken or rejected. And regardless of the nature and direction of word or act, the effects of many choices made during this period of life are profound and long lasting.
>
> —first paragraph of *Youth in Transition, Volume I*
> (Bachman, Kahn, Mednick, Davidson, and Johnston, 1967, p. 1.)

> Contrary to what might have been expected by those who view adolescence as a period of great turbulence and stress, we have found a good deal of consistency. . . . This is not to say there were no changes at all. People do change in response to environmental circumstances. . . . Nevertheless, the dominant picture that emerges from this research is not change but stability. Again and again, with respect to attitudes, aspirations, self-concepts, and behaviors, we found that differences correlated with different experiences in the late teens and early twenties generally pre-dated the actual experiences.
>
> —excerpted from the concluding chapter of the present volume

These two statements, separated by a decade of longitudinal research and analysis, reveal much about both our expectations and our conclusions. They also demonstrate that change and transition can indeed occur—at least in the viewpoints of social scientists! At the start of the Youth in Transition project, we planned a longitudinal study that would begin with tenth-graders and extend to one year beyond high school, and we expected to discover some important and systematic changes which could be linked to the different social environments experienced during those four years. Now, more than a decade later, we are reporting the results of a longitudinal study which grew to span eight years, and our conclusions place more emphasis on stability than on change.

This report details the findings from five waves of the Youth in Transition project. The study began in 1966 with a nationwide cross section of young men in tenth grade, who were then resurveyed in 1968, 1969, and 1970. The fifth data collection occurred in 1974, a point five years after most had graduated from high school. The primary objectives of this fifth survey were:

1. To explore the effects of dropping out of high school, particularly by comparing the occupational attainments of dropouts with graduates.

2. To learn more about the degree to which tenth-grade measures can predict educational and occupational attainments.

3. To assess the role of educational attainment in occupational attainments, particularly as compared with the role of family background and intellectual ability.

4. To determine the impacts of various post-high school environments and experiences (educational, occupational, military, marital, and parental) on values, attitudes, and behaviors. Included are such dimensions as: self-esteem; occupational attitudes; job satisfaction; views on race relations, government activities, family planning, population issues, use of illegal drugs; self-reported drug use; and delinquent/criminal behavior.

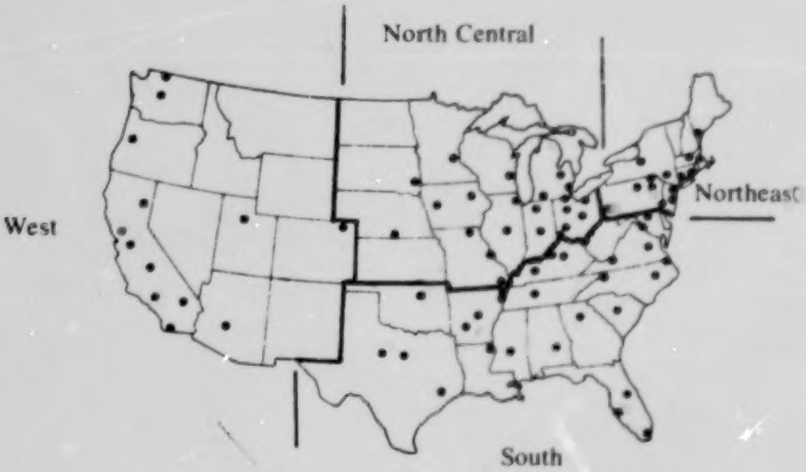
Research Design and Methods

The research design centers around a panel of 2,213 adolescent males chosen in 1966 to be representative of young men entering tenth grade in public high schools in the United States. The panel agreed to be surveyed at intervals of one year or more for an indefinite period. For those who did not drop out of high school, the first three data collections occurred while panel members were still in school. The first took place in the fall of 1966 when the subjects had just entered tenth grade. Additional data collections occurred in the spring of 1968 (the end of eleventh grade for most) and the spring of 1969 (just before most were graduated). The last two data collections corresponded to one year and five years beyond high school: the spring of 1970 and the spring of 1974. Additional data concerning school environments were obtained from principals, counselors, and samples of teachers in each of the schools which participated in the study.

This sequence of five data collections from the panel is an improvement over the three data collections projected at the beginning of the study in 1965. Details on the original study design can be found in Volume I of the *Youth in Transition* series by Bachman et al. (1967).

FIGURE 1-1

Distribution of Primary Sampling Units in the Survey Research Center's Sampling Frame of the United States



Sample Design and Response Rates. The study began with 2,213 tenth-grade boys in 87 public high schools. The schools were located in communities across the United States, corresponding to the Survey Research Center's primary sampling units (see Figure 1-1). Schools and boys were selected through a multi-stage sampling design in such a way that the probability of a school's selection was proportionate to its size (i.e., the estimated number of tenth-grade boys), and roughly equal numbers of boys (about 25) were selected from each school. The net effect of this design was to provide an essentially unbiased representation of tenth-grade boys in public high schools throughout the contiguous United States. Technically, to provide bias-free representation, weights should be applied to the data to compensate for schools too small to provide the requisite number of cases. In this instance, however, the weights would be small—an average of 1.14 across the sample—and would make very little difference in the calculated point estimates associated with univariate and bivariate analyses. Furthermore, the rationale for using weights in complex multivariate analyses or on samples which have suffered attrition is not very firm. For these reasons, in this monograph we have chosen to present analyses based on unweighted data.

Response rates for the initial data collection were considered at two levels: schools and students. From the initial place of sampling, 88 schools were invited to participate; 71 consented and replacement schools in the same geographic areas were secured for all but one of the remaining schools. In the resulting 87 participating schools, 2, 277 boys were invited to participate in the study; 2,213 (over 97 percent) of those students participated in the first data collection.

Table 1-1 presents a summary of data collections and the response rates throughout the study. As the table indicates, more than 73 percent of the young men who began the study in 1966 were still participating in 1974.

Field Procedures. The initial data collection took place in schools and during school hours. Individual interviews were conducted with all respondents by the Survey Research Center's staff of trained interviewers. After all interviewing had been completed in a school, the participants as a group spent a morning or afternoon completing a battery of tests and questionnaires. The group sessions were conducted by the interviewers, following standardized instructions.

The second, third, and fourth data collections were limited to interviews and questionnaires and were conducted at neutral sites, such as library conference rooms, community centers, and church basements. Since it was important that the data collection conditions be as similar as possible for dropouts and stayins, school buildings were considered undesirable sites. Respondents' homes also were considered undesirable places to collect the data since the potential lack of privacy might have interfered with frank and open answers to some rather personal questions. Interviewers arranged neutral sites in the same general neighborhood as the schools used in the initial data collection, then contacted respondents (usually by phone) to arrange individual appointments. In the fourth data collection special efforts were made to locate young men who had entered military service. Interviewers were sent to domestic military bases, and a special self-completed questionnaire version of the interview was sent to panel members serving overseas.

The fifth and final data collection used a self-completed mail-out questionnaire. About 1,300 completed questionnaires were obtained via mail-only contact. Survey Research Center interviewers were employed in a special follow-up effort to insure maximum participation. Working within a limited budget, the interviewers tried to contact all nonrespondents in their immediate geographical areas, particularly contacting

TABLE 1-1

Data Collections from Young Men

Data Collection	Time 1	Time 2	Time 3	Time 4	Time 5
Date	Fall 1966 (tenth grade)	Spring 1968 (eleventh grade)	Spring 1969 (twelfth grade)	Spring 1970 (grade 12 + 1 yr.)	Spring 1974 (grade 12 + 5 yrs.)
Procedure	Individual interviews; group-administered tests and questionnaires	Individual interviews and questionnaires; $2 payment	Group-administered questionnaires; $5 payment	Individual interviews and questionnaires; $10 payment	Mail questionnaires; $10 payment
Location	Schools	Neutral Site	Neutral Site	Neutral Site	Respondent's Home
Number of Respondents*	2,213	1,886	1,799	1,620	1,628
Percentage of Original Sample (N = 2,277)	97.2	82.8	79.0	71.1	71.5
Percentage of Time 1 Panel (N = 2,213)	100	85.2	81.3	73.2	73.5

*Probability sample located in 87 schools.

those panel members who had been identified as high school dropouts. They obtained an additional 300 questionnaries by this follow-up effort.

Measurement Content. A large number of dimensions were measured in the five data collections from young men. The initial data collection included tests of ability and academic skills, measures of family background characteristics, and a large number of "criterion" dimensions: affective states, self-concepts, values and attitudes, plans, and behaviors. These measures are described in *Youth in Transition*, Volume II, and most of them are summarized in Appendix A of this volume. Many of the criterion dimensions were repeated in all five data collections (see Table 1-2), thus permitting a fairly detailed assessment of change during the eight-year span of the longitudinal design.

Sources of Bias in a Longitudinal Study

Two special types of bias are possible in longitudinal studies. First, repeated data collections may lead to changed answers; that is, individuals who answer some of the same questions two or three years in a row may show systematic changes in responses simply because of the repetition. Second, certain types of individuals may be especially likely to leave the panel of subjects, thereby biasing the sample that remains in later data collections.

Repeated Measurement. The first problem, repeated measurement effects, was explored by using a small control group sample of individuals who were selected at the time of the initial data collection (1966) but not contacted until the fourth data collection (1970). One hundred fifteen control subjects completed the fourth data collection, and their responses were compared with corresponding subjects from the regular sample. The results clearly indicated the absence of repeated survey effects; those who had been participating in the study for nearly four years gave answers similar to those of their classmates from the control group who were answering for the first time. (See Appendix C for details.)

Panel Losses. As noted earlier, 74 percent of the original panel were still participating in the study some eight years after the initial data collection. This is a highly acceptable retention rate for a panel study and compares favorably with the response rate for many one-time, cross-sectional surveys. But what about those who left the study? Do they come disproportionately from particular subgroups, thus biasing the sample that remains? On the basis of the initial (Time 1) data collected from nearly all subjects in the sample, it is possible to compare those who left the study with those who participated throughout the study.[1] On the whole, the composition of the sample at Time 5 looks remarkably similar to the original sample from Time 1, as shown in Table 1-3. The

TABLE 1-2

Variables by Conceptual Category

	Time				
Category	1966 (1)	1968 (2)	1969 (3)	1970 (4)	1974 (5)
Educational Attainment					
Number Years Schooling*					X
Education Attained*					X
Occupational Attainment					
Job Status-Duncan*					X
Employment Status*					X
Hourly Pay Rate*					X
Job Satisfaction*					X
Job Characteristics (Actual)*					X
College					
College Status Ranking					X
College Mean ACT Score					X
Environments/Experiences					
Military Service*					X
Marital/Parental Status*					X
Urbanicity					X
Family Background					
Socioeconomic Level	X				
Father's Occupation	X				
Father's Education	X				
Mother's Education	X				
Number of Possessions in Home	X				
Number of Books in Home	X				
Number of Rooms/Person	X				
Number of Siblings	X				
Intactness of Home	X				
Parental Punitiveness	X				
Race	X				
Urbanicity (origin)	X				
Ability					
Composite Ability	X				
Quick Test	X				
GATB-J	X				
Gates Reading Test	X				
Educational Behaviors					
Repeated Grade	X				
Average Grades (High School)	X	X	X		
Number of Hours Homework	X	X	X		
Rebellious Behavior in School	X	X			
Curriculum	X	X	X		
Educational Plans					
College Plans	X	X	X		
Educational Attitudes					
Interest in Courses	X	X	X		
Positive School Attitudes	X	X	X		
Negative School Attitudes	X	X	X		
Academic Achievement Value	X	X	X		
Self-Concepts					
School Ability	X	X			
Does Best Work in School	X	X			
Works Harder than Average	X	X			

TABLE 1-2—Continued

	Time				
Category	1966 (1)	1968 (2)	1969 (3)	1970 (4)	1974 (5)
Satisfaction with School Work	X	X			
Self-Esteem	X	X	X	X	X
Motives					
Test Anxiety	X	X			
Need Self-Development	X	X	X	X	
Need Self-Utilization	X	X	X	X	
Affective States					
Happiness	X	X	X	X	
Negative Affective	X	X	X	X	
Somatic Symptoms	X	X	X	X	
Impulse to Aggression	X	X	X	X	
Social Values and Attitudes					
Social Values Cluster	X	X	X	X	
Internal Control	X	X	X	X	
Trust in People	X	X	X	X	
Trust in Government	X	X	X	X	X
Interest in Government	X	X	X	X	X
Racial: Strong Government			X	X	X
Racial: Social Distance			X	X	X
Racial: Perceived Discrimination			X	X	X
Vietnam Dissent			X	X	X
Military Influence			X		X
Abortion				X	X
Population Concern				X	X
Desired Family Size				X	X
Occupational Attitudes and Aspirations					
Job that Pays Off	X	X	X	X	X
Job that Doesn't Bug Me	X	X	X	X	X
Ambitious Job Attitudes	X	X	X	X	X
Status of Aspired Occupation	X	X	X	X	X
Job Characteristics (Ideal)	X	X	X	X	X
Delinquent Behaviors					
Delinquent Behavior in School	X	X	X		
Seriousness of Delinquency	X	X	X	X	X
Interpersonal Aggression	X	X	X	X	X
Theft and Vandalism	X	X	X	X	X
Drug Use					
Cigarettes			X†	X	X
Alcohol			X†	X	X
Marijuana			X†	X	X
Amphetamines, Barbiturates, LSD			X†	X	X
High School-Aggregate					
Mean Socioeconomic Level	X				
Mean Quick Test	X				
Mean GATB-J	X				
Mean Gates Reading Test	X				

*This dimension was also measured at earlier time points, but only the 1974 measure is analyzed in this report.

†Measured retrospectively in 1970.

NOTE: An "X" indicates the particular dimension was measured at the indicated time point.

TABLE 1-3

Time 5 Retained Sample Compared with the Original Sample

Time 1 Variable	Percentage Composition Original Sample	Retained Sample
Region of the Country (1966)		
West	15	16
North Central	31	31
Northeast	23	23
South	31	30
Community Size		
Rural	24	23
Small Town	19	20
Small City	15	15
Medium City	11	11
Suburb	20	20
Large City	11	11
Socioeconomic Level of Family		
a. Low	22	19
b.	27	27
c.	26	27
d.	15	16
e. High	7	8
Missing Data	3	2
Intactness of Family		
Intact	80	83
Broken by Death	8	7
Broken by Divorce	13	10
Race		
Whites	87	90
Blacks	12	8
Others	2	2
Delinquency		
a. Low	22	20
b. Medium	56	57
c. High	22	23
Intelligence (Quick Test)		
a. Low	9	7
b.	19	18
c.	37	38
d.	27	28
e. High	8	9
High School Completion		
Stay-ins	82	87
Dropouts	18	13

distributions for region and community size were almost identical, i.e., the *percentages* of respondents in the four geographical regions of the United States and in the six categories of community size were nearly the same at Time 1 and Time 5. Data on the socioeconomic levels of the boys' families showed slightly greater losses from the lowest level; the original sample had 22 percent in the bottom category while the Time 5 sample had 19 percent. Similarly the two lowest categories under general intelligence showed a 3 percent decrease. The most severe losses occurred among blacks and among high school dropouts. The original sample had approximately 12 percent blacks—the national average at that time; the retained sample had only 8 percent. An estimated 18 percent of the original sample dropped out of high school at some point, but the retained sample showed only 13 percent in that category.[2]

What are the implications of these panel losses for population estimates and relationships among variables? In general, this study has not been concerned with making population estimates of the distribution of various characteristics; instead, it has focused on relational analyses dealing with the ways in which personal or environmental characteristics relate to selected outcomes such as educational or occupational attainment. However, in 1970 the study scope was expanded to include the measurement of drug use behaviors. This expansion led to several intensive efforts to reweight the retained sample so as to reconstitute the original sample. Lloyd Johnston (1973b, 1975) reported that the new weights resulted in revised estimates of various types of drug use that differed by a range of one-tenth of a percentage point to less than two percentage points (0.1%–1.8%). These analyses and others have led the authors to conclude that the retained sample is adequate, and that the introduction of sample weights into the analyses is unnecessary given their marginal contribution to accuracy.

The analyses in Appendix C indicate that panel attrition does not have a serious impact on relational analyses. In that appendix, correlations among major variables measured in 1966 are computed based on the entire 2,213 respondents in the 1966 sample as well as the 1,628 respondents retained in the 1974 sample. Comparisons of corresponding correlation coefficients show very small differences. One example is the relationship between educational attainment and occupational outcomes. Our under-representation of high school dropouts might be expected to affect the relationship between educational attainment and unemployment or job status *if* the characteristics of school dropouts who left the study differed from those school dropouts who stayed in the study. Examination of the issue indicates that this is not the case, however, as was demonstrated in *Youth in Transition*, Vol. III. In that monograph three major analysis groups were distinguished: high school dropouts, high school graduates with no further education, and graduates who continued their education after high school. It was possible to classify most nonrespondents into the appropriate analysis group on the basis of earlier data or reports obtained from interviewers during follow-up attempts. Time 4 participants were compared with nonparticipants on a number of measures from the initial interview. The authors concluded in Volume III that:

> In general, the initial scores for intelligence, socio-economic level, etc., obtained at the start of tenth grade are about the same for those dropouts who participated at Time 4 as for those nonparticipants who were identified as having dropped out. This conclusion for [dropouts] also applies to [high school graduates with no further education and graduates who continued their education after high school]. In other words . . . within each analysis category there is little difference in background and ability between those who continued their participation through Time 4 and those who did not (p. 19).

While the shape of the relationship should not be affected by the under-representation of dropouts, estimates of the explanatory power of this variable in the population (e.g., percentage of variance explained) could be affected. This monograph, however, does not give a great deal of emphasis to such statistics.

Similar investigations of the impact of panel attrition have not been done for blacks, primarily because the study was not designed to address the issue of racial differences, and thus the sample is inadequate to this task in most cases. In this report, differences between whites and other racial/ethnic groups are not reported. (See *Youth in Transition*, Vol. II, for a discussion of racial groupings in this study.)

Conclusion. The panel originally constituted in 1966 was a representative national sample of the male members of the public high school class of 1969. Eight years later the respondents who remained in the panel continued to be representative on most dimensions. An exception occurred for high school dropouts who were lost disproportionately from the sample. This bias should not affect the *shape* of any of the relationships noted, and should affect the population estimates of the *strength* of relationships only in the case of variables highly correlated with dropping out.

The Class of 1969: A Profile Five Years Later

What are the young men in the Youth in Transition (YIT) panel like? Where did they come from and what were they doing in spring of 1974? The answers to these and similar questions provide a useful backdrop for interpreting the findings of this study. On the one hand, they demonstrate the representativeness of the YIT sample; on the other, they provide a context in which to interpret our respondents' achievements.

Demographic Characteristics. The sample was originally selected from the 74 primary sampling units which comprise the sampling frame for national studies of the Survey Research Center. This procedure permits selection of respondents from all regions of the country (Table 1-4A) and from locations which vary in population density from sparsely populated rural farm areas to large metropolitan centers (Table 1-4B). In 1974 some 45 percent of the retained sample were living in relatively small communities of less than 50,000 people; indeed, 19 percent were in rural or farming communities. By comparison, census data show that 60 percent of the entire population live in rural/small-town areas of this size. The figure of 45 percent for the YIT sample shows that while there might have been some movement to the cities—a continuing trend in the United States over the last century—an impressively large percentage did not make such a move. Although young adults are considered to be highly mobile, fully 70 percent indicated that they were living within 50 miles of the place where they lived when last in high school. (But it should be noted that those who did move more than 50 miles away were less likely to be participants in 1974.)

Since the panel was selected as a grade cohort, there is a range of ages—from 21 to 25 with a median age of 23.4 years in 1974 (Table 1-4C). Originally, the racial composition of the panel matched national distributions; 12 percent of the youth were black. Over the eight years of the study attrition was heavier among blacks, leaving the final panel with 8.5 percent blacks. Other minorities made up 1.7 percent of the panel (Table 1-4D).

The period of the late teens and early twenties is associated with severing ties with parents and the parental home and establishing one's own household. The panel members were well into this transition by age 23. Most were in different housing arrangements than during high school; less than one-quarter were still living with their parents (Table 1-4E,F). About one-half of the respondents (50.9 percent) had married and one-quarter had children. Census (1974a) data indicate that in March 1974, 53.6 percent of the 23-year-old males had been married at least once.

Figure 1-2A shows the principal activities in which panel members were engaged at Time 5. Three-quarters were in the labor force and 17 percent were still students, although many of the latter would soon be completing their education and entering the labor force. Six percent were in military service, and another 20 percent had some form of military experience behind them. This total of 26 percent having some form of military experience was quite reasonable for this age group, since they reached draft age in 1969 at the height of the Vietnam conflict. Undoubtedly, subsequent high school classes graduating during the 1970s will have lower rates of military service.

(Appendix C contains several tables which show selected comparisons of the YIT panel with census data. See Tables C-2 and C-3).

Educational Attainment and Aspirations. Figure 1-2B shows the

TABLE 1-4

Selected Characteristics of the Youth in Transition Panel, Spring 1974

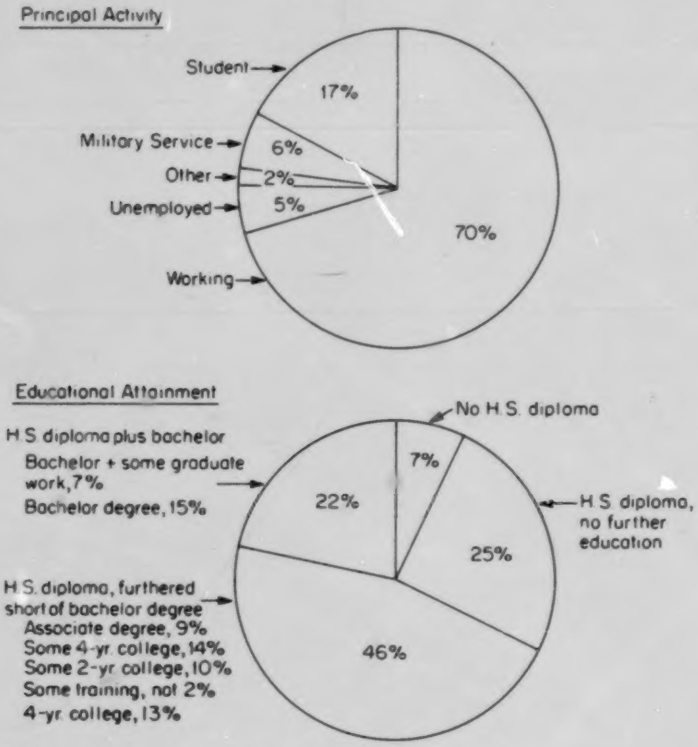
Characteristic		Percentage with Characteristic
A. *Region of Residence*		
Northeast		21.8
North Central		29.5
South		30.3
West		18.4
		100.0
B. *Urbanicity*		
Rural or Farming Community		18.9
Small Town or City (<50,000)		25.6
Medium City/Suburb (50K-100K)		17.4
Fairly Large City/Suburb (100K-500K)		19.2
Very Large City/Suburb (>500K)		18.9
		100.0
C. *Age*		
<22.5		8.4
22.5-23		36.4
23-23.5		32.8
23.5-24		11.8
>24		10.6
Median age = 23.4		100.0
D. *Race*		
Black		8.5
White		89.7
Other		1.7
		100.0
E. *Marital Status*		
Single		49.1
Married */No Children		27.2
Married */Some Children		23.7
a. One Child	16.9	
b. Two Children	5.7	
c. Three or More Children	.9	
		100.0
F. *With Whom Do You Live?*		
By Myself		13.8
With Parents		23.9
With Wife		45.5
With Other Relatives		3.8
With Persons Not Related to Me		17.0
Other		1.1
		105.1†

*Includes a total of 3.7 percent of the panel who were divorced or separated.

†Multiple responses possible. Most frequent was a combination of "with wife" and "with other relatives."

FIGURE 1-2

Principal Activity and Educational Attainment of the Youth in Transition Panel, Spring 1974



Five years beyond high school (median age of 23.4 years).

educational attainment of the YIT panel. Ninety-three percent of the respondents had secured a high school diploma or its equivalent as of Spring 1974. This percentage is higher than the figure reported in *Youth in Transition*, Vol. III because a number of dropouts found a way to complete their high school education work after leaving school (night school, General Educational Development Test, etc.).

As indicated earlier, "high school dropout" is one of two groups from which the YIT panel has had disproportionate losses over the eight years of the study. We estimate that 10 percent (±1 percent) is the true percentage of dropouts who had not earned a high school diploma or its equivalent by age 23 (the calculations for this estimate are contained in

Appendix D). Using this figure, we conclude that the YIT panel at Time 5 under-represented dropouts by a factor of 1.4. Again it should be noted that analyses comparing the characteristics (using Time 1 data) of those dropouts who stayed with the panel and those who did not indicate that those who stayed with this study were fairly representative of the total category of dropouts.

Fully two-thirds of the panel members continued their education beyond high school. They pursued a large variety of options ranging from on-the-job training and vocational schooling to the more academic approaches represented by four-year colleges. Twenty-two percent completed a bachelor's degree.

To these data on attainment can be added the aspirations these men held for additional education. Respondents were asked early in the 1974 questionnaire:

> Now we'd like to know about some things you already are doing or have done or plan to do in the next few years. Please look at each of the ten activities below and check . . . how likely you are to do each.

They were given six response alternatives:

1. I am now doing this
2. I have already done this
3. I definitely will do this
4. I probably will do this
5. I probably will *not* do this
6. I definitely will *not* do this

The data from these questions are displayed in Table 1-5. The data suggest that at a point in time five years beyond high school many young men have high attainments in the area of education and training, and many aspire to additional education. While 94 percent of the panel members had earned (or were just short of earning) their high school diploma, fully half of the remaining 6 percent were still looking forward to receiving high school certification at some time in the next few years. To the graduates of two- and four-year colleges must be added another 14 percent and 24 percent, respectively, who anticipated graduation in the near future. Fully one-quarter of all panel members thought it likely that they would pursue some form of graduate or professional training beyond the bachelor's degree. While census data on attainment of older age groups raise questions about whether these aspirations will be fulfilled in the next few years, their very expression is a sign of the extent to which education and training had become deeply ingrained in the plans of American youth in 1974.

TABLE 1-5

Educational Attainment/Aspirations at Age 23

Education/Training Activity	Percentage Having Attained or Almost*	Percentage Expecting to Attain†	Total
Complete high school or earn high school equivalency	94.0	3.3	97.3
Attend a technical or vocational school since high school	19.8	12.3	32.1
Two-year college: attend	24.2	8.9	33.1
Two-year college: graduate	11.6	14.2	25.8
Four-year college: attend	44.0	11.4	55.4
Four-year college: graduate	24.8	23.6	48.4
Attend graduate or professional school after college	7.6	25.4	33.0

*Includes those who marked "now doing" or "already done." Sometimes higher than percentages in Figure 1-2 because of the "now doing" group who are not included in Figure 1-2.

†Includes those who marked "definitely will" or "probably will" do this.

TABLE 1-6

Types of Jobs Held in 1974

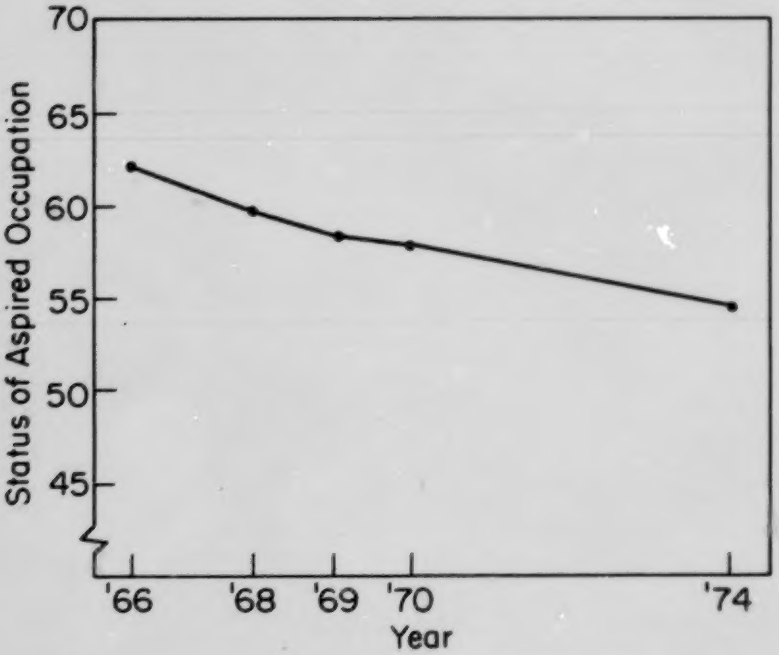
Category	Number	Percentage
Professional and Technical	155	15.8
Manager and Proprietor	100	10.2
Clerical and Sales	115	11.7
Craftsmen	207	21.0
Operatives and Service Workers	298	30.3
Nonfarm Laborers	86	8.7
Farmers	23	2.3
	984	100.0

Occupational Attainment and Aspirations. As Figure 1-2A shows, the principal activity as of Spring 1974 for most of the sample was working on a job. Table 1-6 shows what kinds of jobs the respondents held. The largest single category, with about 30 percent of the workers, was operatives and service workers, including such jobs as bus driver and factory worker. Another 21 percent were craftsmen (carpenters, electricians, etc.). Clerical and sales workers comprised about 12 percent of the group. Nearly 26 percent were already in relatively high status jobs—professional and technical workers, or managers and proprietors. The remaining workers were laborers (9 percent) and farmers (2 percent).

At each of the five data collections, the panel was asked what job they expected to have 20 years later. These job aspirations were con-

FIGURE 1-3

Status of Aspired Occupation, 1966 to 1974 (Based on the Duncan Scale)



NOTE: The data underlying this figure can be found in Appendix E-1-3.

verted to scores on the Duncan scale of socioeconomic status of jobs (Duncan, 1961). Scores on this scale range from 1 to 96, with the lowest scores being assigned to jobs such as laborer in a sawmill or railroad yard and the highest scores to professions such as physician or judge. As shown in Figure 1-3, in tenth grade (1966) the average Duncan score for aspired occupations was 62. Over the following eight years, this average declined in small amounts down to 55—a drop of nearly one-third of a standard deviation. (The average Duncan score for the occupation attained as of 1974 is only 36. But the data in Figure 1-3 are based on the total sample, many of whom were still students and therefore had no attained occupation. The occupations which the students planned to enter after college were generally of fairly high status.)

For some the decline evidenced in Figure 1-3 undoubtedly results from changes in educational aspirations. For others the decline is probably attributable to the fact that they are learning more about the realities of the labor market.

Summary. The Youth in Transition panel at age 23 is representative of young men from the high school Class of 1969. The characteristics of those who remained with the panel through 1974 closely match census data for that age cohort with the exception that the panel is slightly more educated and has more whites than it would if the entire sample had remained with the study throughout its eight years. At age 23 these young men had largely completed the transition from school to work and had begun establishing homes and families of their own and settling into jobs that would support a life apart from their parents.

Notes

[1] These differences and their implications are discussed in more detail in Appendix C; only the conclusions are reported here.

[2] Table 1-3 indicates that 13 percent of the sample are dropouts, while Figure 1-2B shows only 7 percent as dropouts. The discrepancy is the result of two different definitions of dropout. In Table 1-3, a dropout is defined as in Volume III (Bachman et al., 1971), any one who interrupts full-time attendance in high school for more than a few weeks. This definition is used to make the figures in the two columns comparable. But in Figure 1-2B, and in the rest of this report, a dropout is defined as anyone who does not have a high school diploma or equivalent.

Chapter 2

PREDICTORS OF EDUCATIONAL ATTAINMENT

Why do some individuals extend their educations through college and into graduate school while others drop out of high school? What are the factors of background, ability, earlier educational experience, plans, values, attitudes, and behaviors that predict—and perhaps help to determine—later levels of educational attainment? To what extent do such basic factors as family background and ability show a direct or continuing effect on educational attainment, and to what extent do they appear to have an "indirect" impact via their influence on other factors such as educational success in the pre-high school years?

In this chapter we attempt to answer such questions by examining a large number of possible predictors of educational attainment. Specifically, we focus on how factors measured in tenth grade relate to the educational outcomes of young men in their early twenties. The analyses and method of presentation used in this chapter are patterned closely after those used in Chapters 3, 4, and 5 of *Youth in Transition*, Vol. III. In that volume, tenth-grade measures were used to predict the educational attainments of 19-year-old men. The measure of attainment at that early time was a trichotomy: dropouts, high school graduates, and college attenders. The current measure of attainment, obtained four years later, is much more complete and detailed; nevertheless, we find that many of those earlier relationships have not changed very much.

We treat the predictors of educational attainment in a manner somewhat more condensed than was the case in Volume III. We spend less time describing the predictor variables, or explaining the rationale for their inclusion as predictors of educational attainment. In this analysis our strategy is to include the full set of tenth-grade predictor measures which proved useful in our earlier analyses. Those predictors include family background characteristics, intellectual ability, earlier educational behaviors, educational plans and attitudes, self-concepts, occupational attitudes and aspirations, delinquent behavior, and a number of other personality variables.

Two considerations governed our selection of this large array of potential predictors of educational attainment. We were heavily influence by sociological studies of educational and occupational attainment (e.g., Blau and Duncan, 1976; Alexander, Eckland, and Griffin, 1975; Sewell and Hauser, 1975, 1976; Wilson and Portes, 1975). We also sought to understand the extent to which factors which appear as differences *after* various levels of educational attainment have been reached are actually present as differences by the start of high school. Consequently we included a wide range of attitude and personality dimensions. The inclusion of "psychological" variables, and the desire to distinguish between the psychological causes and consequences of educational attainment, represent a special focus for the Youth in Transition project and this volume.

Categories of Educational Attainment

Our measurement of educational attainment now extends to the eight categories introduced in the previous chapter and listed in the left-hand column of Table 2-1. This eight-category version, treated as an interval scale, was used in computing product-moment correlations. For bivariate tables we felt it would simplify matters to combine three of the groups into a "some college" category, thus producing the six-category version of educational attainment shown in the middle column of Table 2-1. For graphic displays, used extensively in this chapter, the four-category version shown in the right-hand column of Table 2-1 proved most workable. These four categories are somewhat imprecisely referred to as 1. dropouts, 2. high school graduates, 3. some college, and 4. college graduates. The underlying data (using six categories of educational attainment) for each of the figures in this chapter are presented in Appendix E. Many figures also include a note reporting the corresponding product-moment correlation (using the full eight-category measure of educational attainment).

Family Background

Our initial analysis of family background and ability included eight background dimensions measured when the respondents were starting tenth grade: socioeconomic level, family size (number of siblings), broken home, family relations (including a subscale measuring parental

TABLE 2-1

Categories of Educational Attainment

Eight-Category Version (used in product-moment correlations)		Six-Category Version (used in tables in Appendix E)		Four-Category Version (used in figures in Chapter 2)	
%	Category	%	Category	%	Category
7	Bachelor degree plus some graduate work	7	Bachelor degree plus some graduate work	22	College graduates
15	Bachelor degree	15	Bachelor degree		
9	Associate degree	9	Associate degree	46	Some college
14	Some 4-yr. college	37	Some college		
10	some 2-yr. college				
13	Some post-high school training (not 2-yr. or 4-yr. college)				
25	High school diploma only	25	High school diploma only	25	High school graduates
7	No high school diploma	7	No high school diploma	7	Dropouts

punitiveness), religious preference, race, parents' political preference, and community size. Analyses based only on tenth grade data showed most of these dimensions to be related to such key variables as school attitudes, occupational aspirations, and college plans (see *Youth in Transition*, Vol. II). In addition, our earlier analyses of educational attainment found that all of these background dimensions, except political preference and community size, were linked to dropping out of high school and/or entering college (see *Youth in Transition*, Vol. III). Accordingly, this chapter will use the same dimensions.

Socioeconomic Level. In many ways, the most basic predictor variable in the Youth in Transition study is family socioeconomic level (SEL). As our earlier analyses indicated, SEL is related to most other background measures; indeed, there are times when what appear to be effects of other factors can be attributed equally well (and with greater parsimony) to SEL.

The summary or index measure of socioeconomic level is a mean of six equally-weighted ingredients: the Duncan status of father's occupation, father's educational level, mother's educational level, number of rooms per person in the home, number of books in the home, and a checklist of other possessions in the home.[1] These ingredients all determine whether a home is a rich environment for learning, an environment in which education and achievement are likely to be encouraged. They may be thought of as indicators of the quality of the home environment. The summary measure is designed to capture much of this quality in a single variable. For any given dependent variable, the use of all six ingredients as separate predictors might provide some additional variance explained, and perhaps some additional empirical or theoretical insight as well; however, in virtually every instance we have examined, the single measure explains very nearly as much variance as the ingredients. Given the simplicity and parsimony of the single measure, we will use it to characterize the quality of family background.

Socioeconomic level has shown consistently strong relationships with measures of intelligence, vocabulary skill, and reading comprehension. Given these strong links to measured ability, it is not surprising to find that SEL is also related to young men's perceptions of their scholastic ability. But it is perhaps worth noting that even after intelligence and other background factors are controlled statistically, a moderate association remains between SEL and self-concept of school ability. A number of other scholastically relevant dimensions are also linked to SEL, including grades, college plans, attitudes toward school, test anxiety, and rebellious behaviors in school. We concluded in Volume II of this series that socioeconomic level is important in shaping ability; but after controls for ability, SEL still has a positive impact on performance, aspirations, school attitudes, and important self-concepts. Thus we conclude that the young man from a high socioeconomic home is, quite literally, doubly advantaged.

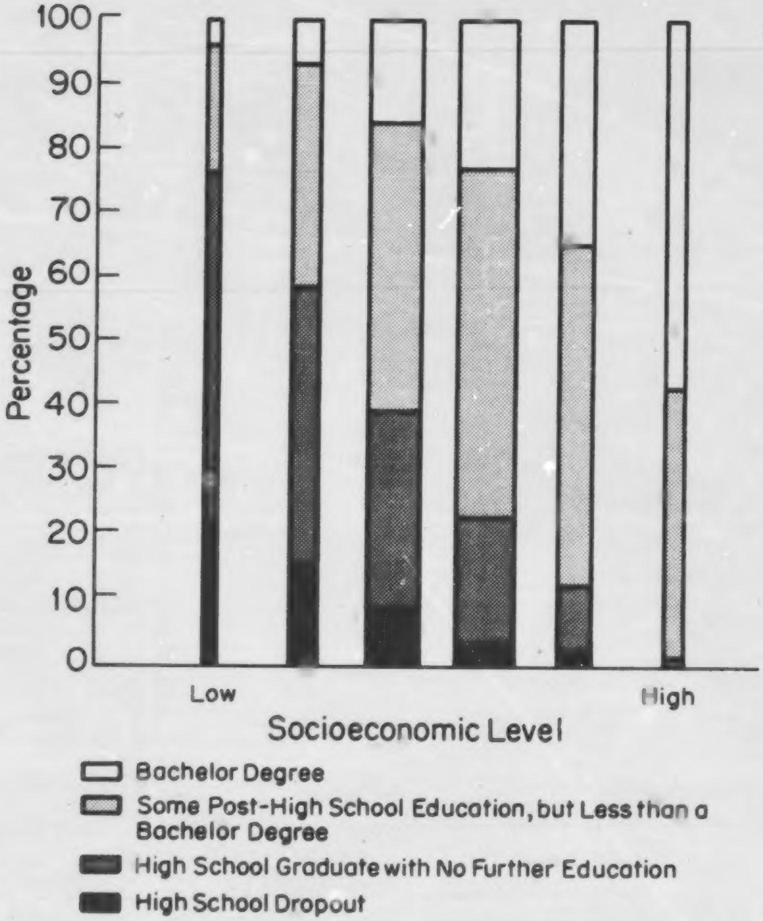
Figure 2-1 shows the relationship between socioeconomic level and educational attainment. Not surprisingly, the relationship is quite strong ($r = .47$). All of the 140 respondents in the top SEL category received a high school diploma, and over 50 percent graduated from college. By contrast, 21 percent of the respondents in the lowest SEL category were dropouts, and only 3 percent graduated from college.

There is a very marked progression in the percentage of those who obtained no post-high school education as one moves from the highest to lowest SEL category: from 1 percent to 12, 22, 39, 58, and finally, 76 percent. To put it another way, virtually all of those from the highest SEL category can count on some post-high school education, while only about one-fourth of the lowest category obtain any higher education.

Family Size. The summary measure of SEL does not include all the dimensions of the home environment. One important additional dimension is family size, i.e., the number of siblings a respondent has. Figure 2-2 shows that this dimension is also associated with educational attainment ($r = -.30$). Essentially, boys from larger families attained less education than those from smaller families. More than half of the boys with six or more siblings failed to obtain any post-high school education; but less than one-quarter of those with two or fewer siblings failed to obtain any.

FIGURE 2-1

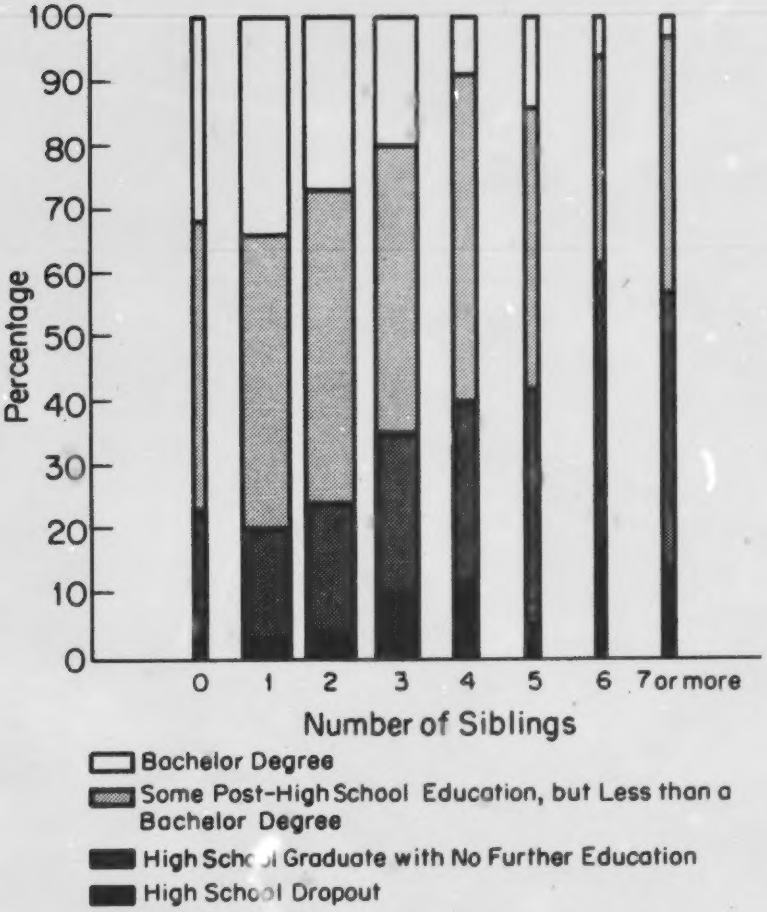
Educational Attainment Related to Parental Socioeconomic Level



NOTE: The product-moment correlation between the eight-category measure of educational attainment and the continuous (nonbracketed) measure of socioeconomic level is .47. In this figure, and all other figures in this chapter, the width of each bar is proportionate to the size of the subgroup it represents.
The data underlying this figure can be found in Appendix E, Table E-2-1.

FIGURE 2-2

Educational Attainment Related to Number of Siblings



NOTE: The product-moment correlation between the eight-category measure of educational attainment and the number of siblings is −.30.
The data underlying this figure can be found in Appendix E, Table E-2-2.

In addition, family size is related to socioeconomic level, smaller families being higher in SEL than larger ones ($r = -.32$). This raises the question, is the association between number of siblings and educational attainment only indirect, and basically attributable to differences in SEL? We show later that this is not the case; the relationship is diminished when SEL is controlled, but it does not reduce to zero.[2]

Broken Home. As one might expect, there is a disadvantage in coming from a broken home, whether broken by divorce or death. Such respondents were about twice as likely to drop out of high school, and they were less likely to attend or complete college than were those from intact homes (Figure 2-3).

As with family size, at least some of the association is a result of SEL. Homes broken by divorce or separation were lower in SEL than intact homes. Homes broken by death, however, were not noticeably lower in SEL, so SEL cannot explain all of the relationship with educational attainment. But as we shall see later, SEL plus other factors do account for virtually all of the relationship.

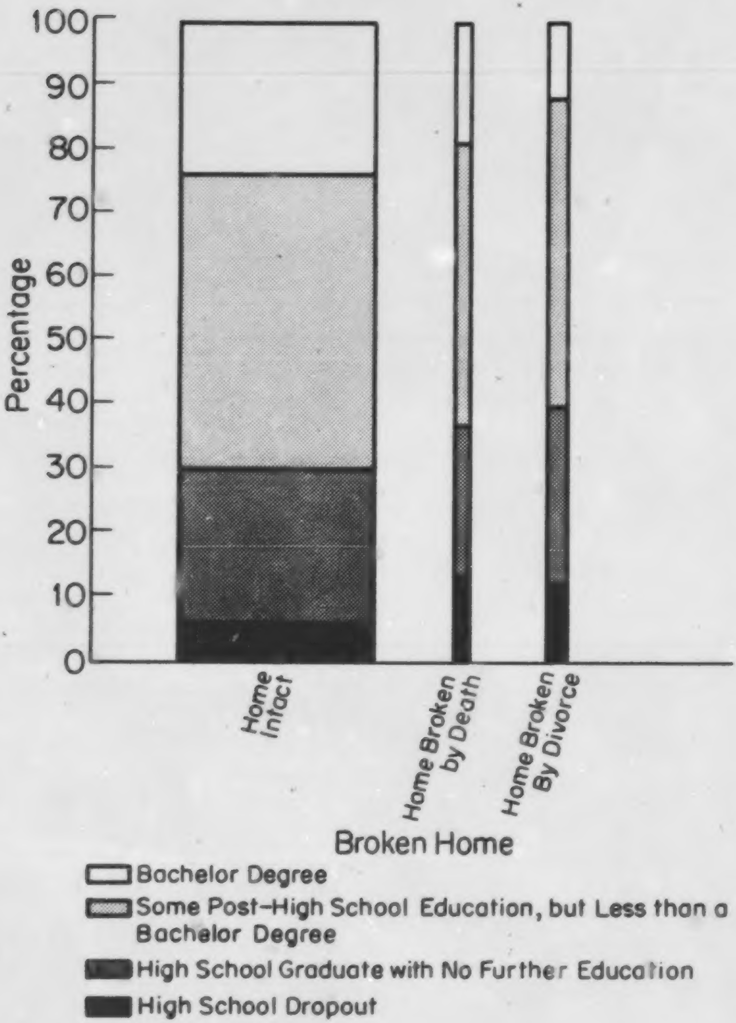
Parental Punitiveness. Regardless of whether a home is intact, an important background variable is the quality of relationships among family members. In Volume III we found that one of the factors predicting dropping out of high school was a measure of parental punitiveness. The punitiveness measure consisted of 10 items asking how often the respondent felt that parents ignored him, acted as if they did not care about him, slapped him, criticized him, punished him, disagreed about how to deal with him, etc. A high score on this index indicated very poor relationships with parents, at least insofar as these relationships were perceived by the son.

As Figure 2-4 indicates, the measure of parental punitiveness shows a relationship to dropping out of high school, and also to college entrance and completion. There is a slight degree of curvilinearity, in that the very lowest group—those who described their parents in the most glowing terms—had a slightly lower rate of educational attainment than either of the next two groups.[3] The overall link with educational attainment is moderate and is somewhat reduced when controls are introduced.

There are at least two different ways to interpret the finding that tenth-grade boys who describe their parents as relatively punitive are more likely to become dropouts and less likely to attend or complete college. The more obvious interpretation is that parental punitiveness above a "low" or "average" level tends to inhibit educational attainment. We suspect this accounts for a good deal of the relationship. But tenth graders who are doing well in school may also be less likely to provide occasion for parental punitiveness, whereas those who engage in

FIGURE 2-3

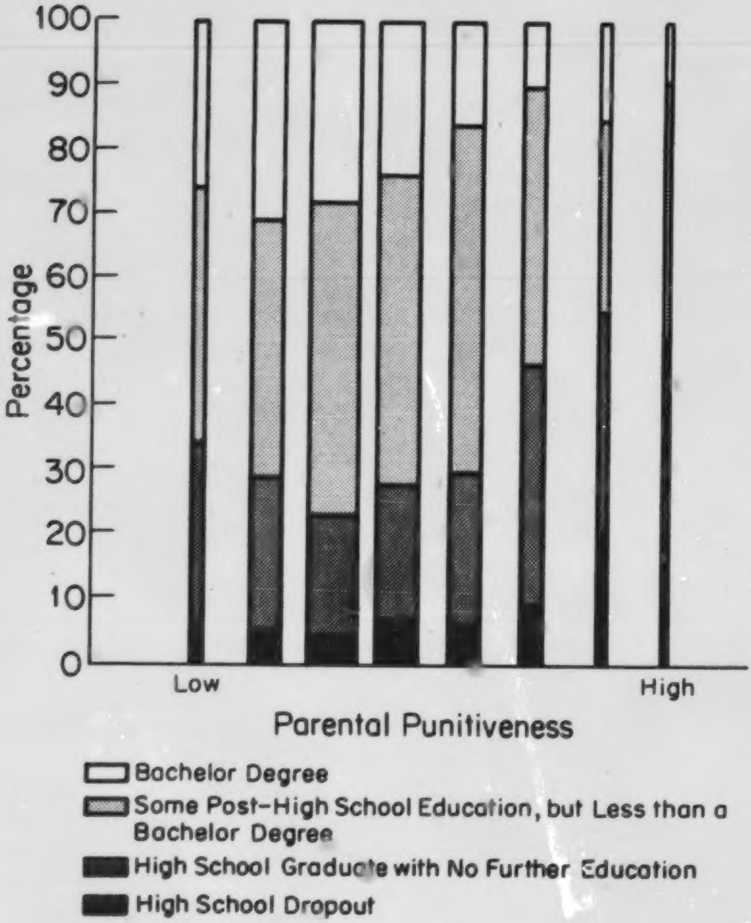
Educational Attainment Related to Broken Home



NOTE: The data underlying this figure can be found in Appendix E, Table E-2-3.

FIGURE 2-4.

Educational Attainment Related to Parental Punitiveness



NOTE: The product-moment correlation between the eight-category measure of educational attainment and the continuous (nonbracketed) measure of parental punitiveness is −.20.
The data underlying this figure can be found in Appendix E, Table E-2-4.

the kinds of behaviors which precede dropping out (e.g., delinquency and rebellious behavior in school) are more likely to trigger punitive behavior from their parents.

Religious Preference. Differences in educational attainment among the family religion categories were very similar to those found in our earlier analyses. The differences among the categories were modest and were substantially reduced by the controls.[4] As in Volume III, there is one exception: respondents from Jewish families attained a higher level of education than would be expected on the basis of other background characteristics. None of the 54 Jewish respondents failed to obtain a high school diploma, and only one (2 percent) did not obtain at least some post-high school education. Sixty-five percent graduated from college. In the next highest attainment group, the Episcopalians, none dropped out of high school and only 17 percent failed to obtain any post-high school education. Thirty-one percent graduated from college. The Baptists attained the least education of the recognized religious groups: 10 percent dropped out of high school, and only 12 percent graduated from college.

Religious preference is not at all appropriate for a product-moment coefficient; the eta is .28.

Race. Race is a very pervasive background factor; however, this study is not well-suited to analysis of race as a predictor. Analyses conducted for Volume II indicated that a careful examination of racial differences could not be accomplished simply by comparing blacks and whites:

> Probably our most basic finding is the fact that the 256 black respondents in this study cannot be studied as a single subgroup. No less than three groups of blacks must be considered, based on different school (and community) environments: blacks in integrated schools, blacks in northern segregated schools, and blacks in southern segregated schools. . . . we first found in preliminary analyses that black students in integrated schools are very different from those in segregated schools in terms of test scores and socioeconomic level; we then found that those in southern segregated schools are quite different from those in northern segregated schools. Given these differences in socioeconomic level and test scores, we decided that these three black subgroups would be examined separately throughout the monograph (p. 198).

The three black subgroups, small in 1966, were smaller still in 1974. Despite the small frequencies, Figure 2-5 clearly shows blacks in segregated schools, both North and South, obtained considerably less education than blacks in integrated schools. The latter were similar to whites in levels of education attained.

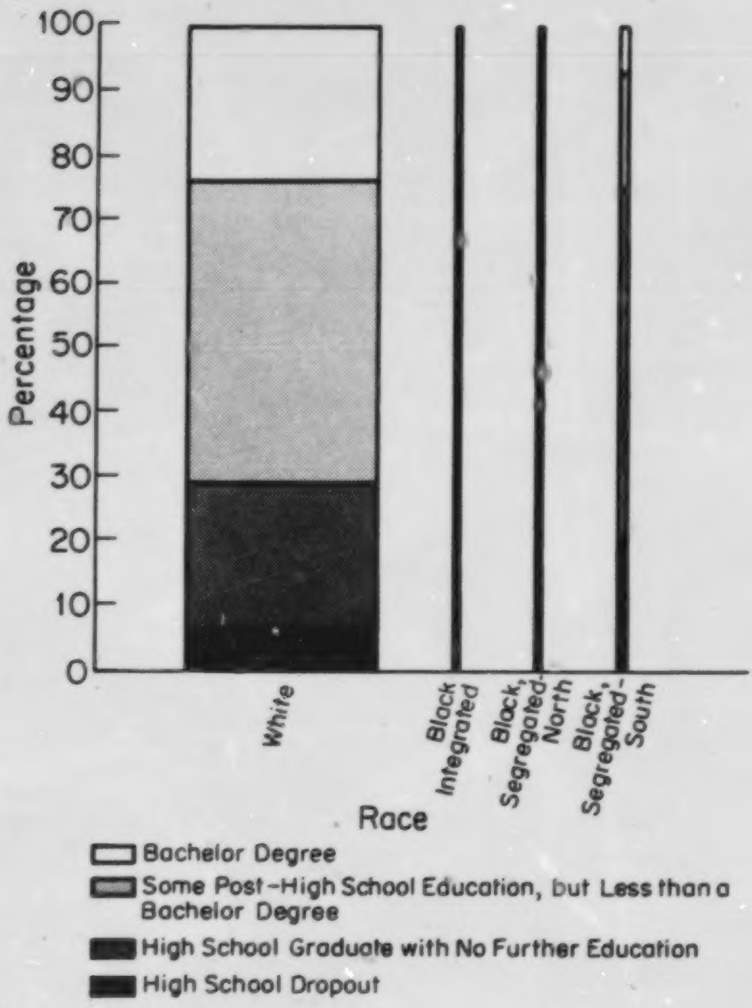


FIGURE 2-5

Educational Attainment Related to Race

NOTE: The data underlying this figure can be found in Appendix E, Table E-2-5.

Intellectual Ability

While family background is important for predicting educational attainment, it is commonly assumed that intellectual ability is the prime determinant of how much education an individual obtains. Dropouts frequently mention their inability to perform well in school as one of their reasons for dropping out, and, of course, college entrance and completion depend on intellectual skills to a considerable degree.

Ability Composite. The measure of intellectual ability used herein is a composite of three tests: Quick Test of Intelligence; General Aptitude Test Battery, Part J (Vocabulary); and Gates Reading Test. The composite is an equally weighted mean of the three. It is superior to any one of the three, though there are slight and subtle differences among them. (See Volume III, pp. 40–46 for a discussion of the differences.)

Figure 2-6 shows the relationship between a five-category bracketed version of the ability composite and educational attainment. As expected, the relationship is quite strong and monotonic (r = .53). While 30 percent of the lowest ability group became high school dropouts, only 1 percent of the highest did. Only 2 percent of the lowest group graduated from college, while 58 percent of the highest group did.

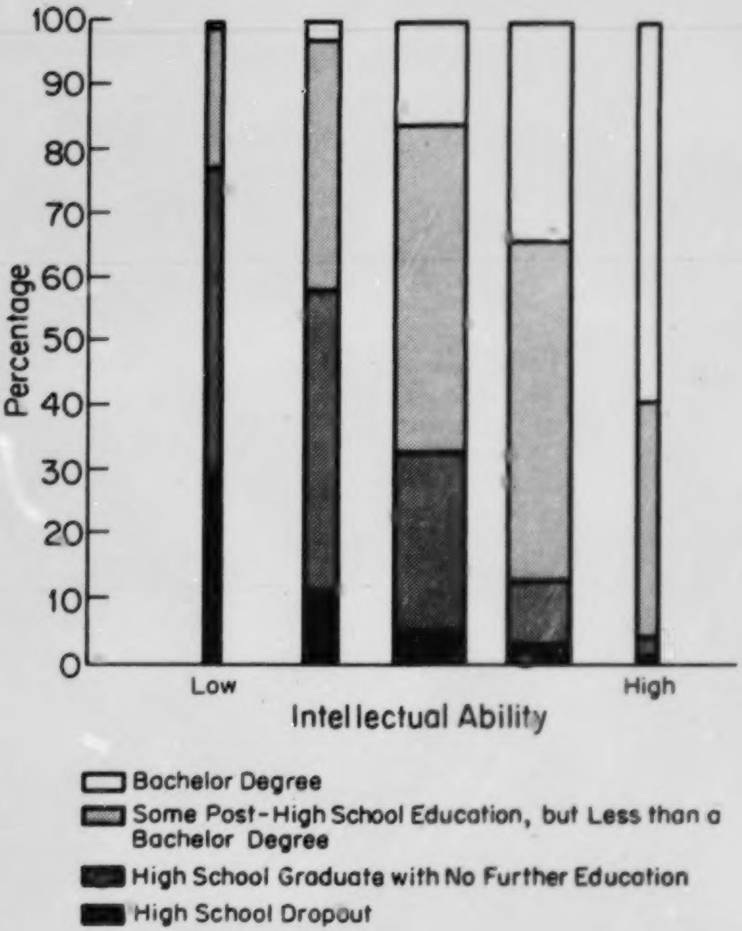
Multivariate Analysis.[5] Both family background and ability are clearly instrumental in attaining education. An analysis regressing educational attainment on ability, plus all the available background measures, is summarized in Table 2-2; the zero-order r's are included for comparison.

Ability is the best single predictor of educational attainment, and it has the strongest direct effect on the eventual outcome. But with ability controlled, the effects of background remain quite substantial, indicating that within each level of ability there is considerable advantage in having a better family background, especially in terms of high socioeconomic level, fewer siblings, and low parental punitiveness.

On a combination of empirical and *a priori* grounds, we have selected socioeconomic level, number of siblings, and the composite measure of ability as a small set of variables to be controlled in looking at later relationships. These three variables alone can explain 34.5 percent (adjusted for degrees of freedom) of the variance in educational attainment. By adding measures of broken home, parental punitiveness, race, region, and rural/nonrural community, we could raise this figure to 36.3 percent; however, that would involve a loss of clarity. The first three variables are conceptually clear, often measured in a relatively standard way, and provide little doubt about causal priorities. The other variables suffer from various problems which considerably reduce their desirabil-

FIGURE 2-6

Educational Attainment Related to Intellectual Ability



NOTE: The product-moment correlation between the eight-category measure of educational attainment and the continuous (nonbracketed) measure of intellectual ability is .53. The data underlying this figure can be found in Appendix E, Table E-2-6.

TABLE 2-2

Multiple Regression Analysis Predicting Educational Attainment from All Background Variables and Ability

Predictor	*r*	Beta	T-Ratio of Beta
Socioeconomic Level	.47	.261	11.05
Number of Siblings	−.30	−.098	4.44
Broken Home	.10	.032	1.56
Parental Punitiveness	−.20	−.102	4.97
Race:			
Black, Segregated, South	−.16	.077	3.30
Black, Segregated, North	−.11	−.015	0.70
Black, Integrated	−.00	.051	2.49
Region:			
West	−.04	−.024	1.01
North Central	−.02	−.039	1.54
Northeast	.11	.000	0.01
Rural/Nonrural	−.09	.005	0.22
Ability Composite	.53	.383	15.05

Percentage of Variance Explained = 36.8 (adjusted = 36.3)

ity as controls. For example, parental punitiveness is the sort of soft variable which may be subject to errors of memory; it is more difficult to conceptualize; and it is seldom measured, thus reducing comparability with other research. This is not to argue that it is an uninteresting variable. On the contrary, we believe its relation to educational attainment to be of interest. We do not, however, wish to use it as a control for other variables with which the causal connections are quite unclear. For example, parental punitiveness correlates .28 with a measure of delinquent behavior in school. Does this imply that parents who use more punitive measures cause their children to misbehave more in school? Or do children who misbehave in school cause their parents to use more punitive measures? To use parental punitiveness as a control implies an affirmative answer to the former question, an assumption we do not care to make.

No such problem exists for socioeconomic level, number of siblings, and ability. The same may be said for the other potential control variables, but these are all of such predictive weakness that we need not be concerned with them. The one possible exception is race; but as indicated earlier, this study is not well suited for racial analyses, and we prefer not to obscure our later analyses with arguably inappropriate controls.

Table 2-3 shows the regression results using only the three variables we will be controlling routinely. A comparison of Table 2-2 and 2-3 indicates that use of just three predictors results in a loss of only about 2 percent in explained variance. Moreover, the beta values for the three predictors are virtually identical in the two tables.

TABLE 2-3

Multiple Regression Analysis Predicting Educational Attainment from Socioeconomic Level, Number of Siblings, and Ability

Predictor	r	Beta	T-Ratio of Beta
Socioeconomic Level	.47	.257	10.92
Number of Siblings	−.30	−.090	4.11
Ability Composite	.53	.376	15.90

Percentage of Variance Explained = 34.6 (adjusted = 34.5)

Educational Behaviors

We have seen thus far that family background and ability strongly relate to eventual educational attainment. But how do some of the other factors studied when the respondents were in tenth grade relate to educational attainment? Let us look first at educational behaviors. We expect that early success in school surely ought to predict later success. But we also want to see how much the background and ability variables account for any observed relationship.

Following the same general plan as used earlier, we will first look at each predictor bivariately, noting the shape and strength of relationship, and then move on to multivariate analyses.

Grade Failure. Perhaps the most dramatic—and traumatic—indication of early failure in school occurs when a youngster is held back a grade. Failing an exam or receiving a poor report card can be very upsetting, but such things can be overcome. When a boy is not promoted to the next grade along with the rest of his class, however, *everyone knows he has failed*. It is almost certain that he will never catch up with his class again.

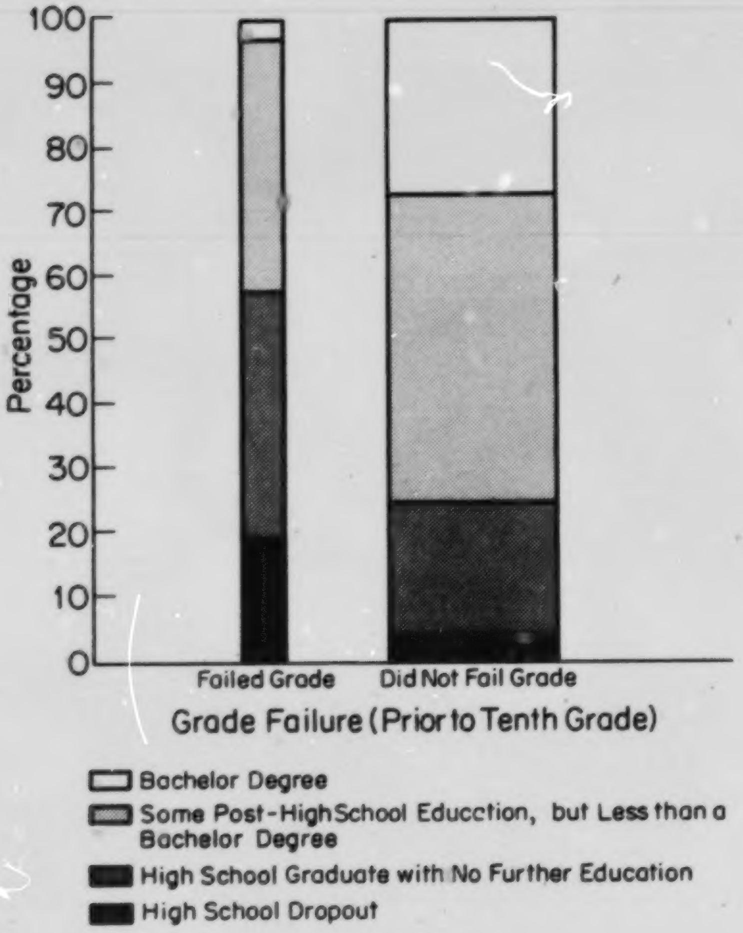
Before they reached third grade, about 9 percent of our respondents had been held back a grade. By the end of sixth grade another 10 percent had been held back. By the start of tenth grade (the second start for about 1 percent), a total of 24 percent had been held back at least one grade.

Our earlier analyses demonstrated that a young man who failed a grade was much more likely to drop out of high school. As Figure 2-7 shows, he was also likely to be considerably less well educated than the nonfailures five years after high school (r = .35). Fifty-eight percent of those held back ceased their education with high school graduation or before, compared to 25 percent of those who never were held back. A point made in Volume III continues to hold true:

> A boy who has been held back a grade is four times as likely to become a dropout compared with someone who has not. It would be tempting to argue

FIGURE 2-7

Educational Attainment Related to Grade Failure



NOTE: The product-moment correlation between the eight-category measure of educational attainment and grade failure is .35.
The data underlying this figure can be found in Appendix E, Table E-2-7.

> from this that no one should ever fail a grade in school, lest he become a dropout. That conclusion may in the end prove to have some validity, but the present data are not sufficient to make the case. All we can say at this point is that being held back a grade is part of the past school experience of over half of the boys who later became dropouts; whether it is an important cause in its own right, or merely a very revealing symptom, remains to be demonstrated (p. 54).

Classroom Grades. High school dropouts do not come primarily from the ranks of the A students. In fact, of the 154 students who reported grade averages of A, only one failed to obtain his high school diploma. Two-thirds of the A students graduated from college. On the other end of the scale, 30 percent of the D students lacked a high school diploma, and another 39 percent obtained no further education after high school. Figure 2-8 displays the relationship ($r = .53$). No variable has a stronger correlation with educational attainment (although ability has the same correlation of .53).

This finding comes as no surprise. What is interesting in the multivariate analyses that follow is that this relationship remains strong even after controls for background and ability.

Hours of Homework. One might expect that the amount of time spent in tenth grade in doing homework would be a strong predictor of later attainment. The association turns out to be rather modest, however ($r = .16$). Among those who reported doing less than five hours of homework per week, only 10 percent later graduated from college; among those who put in five to nine hours the percentage nearly doubled (19 percent). The tenth-graders who put in 20 to 30 hours per week were most likely to graduate from college (32 percent), but those who put in 10 to 19 hours were not far behind (27 percent).

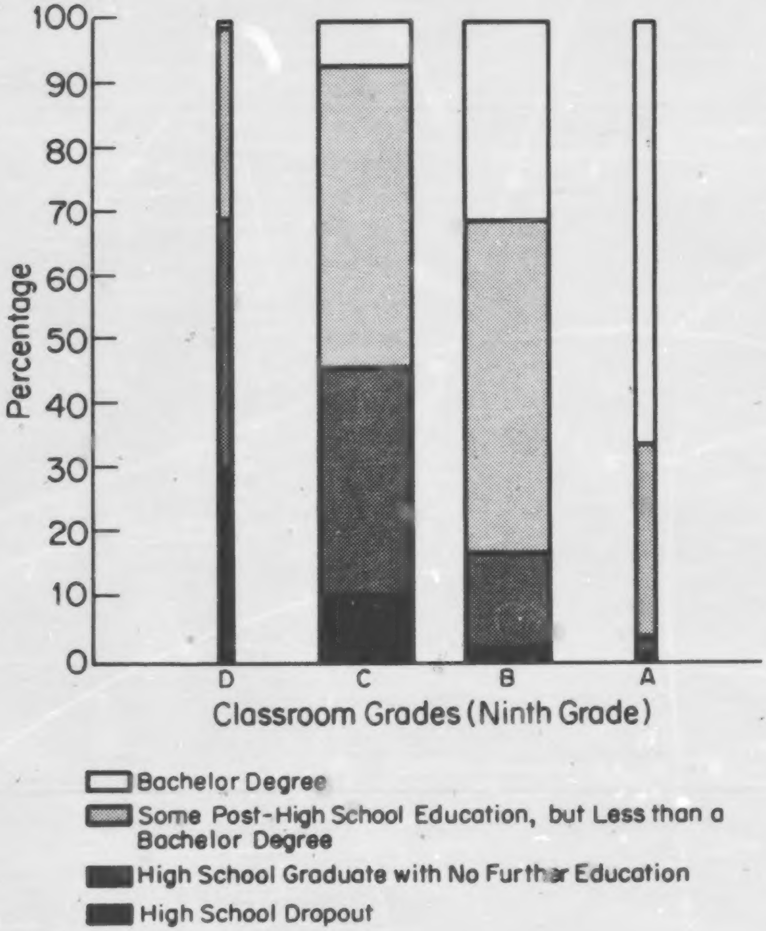
Rebellious Behavior in School. A questionnaire segment consisting of 13 items asked respondents to report how frequently they engaged in disruptive behavior in school, broke rules, or did poor school work. The items covered such topics as fighting or arguing with other students, goofing off in class, skipping class, coming unprepared, copying assignments, and cheating on tests. The 13 items made up an index of rebellious behavior in school. (This index should not be confused with another to be used later, called delinquent behavior in school.)

Figure 2-9 shows how rebellious behavior in tenth grade predicts later educational attainment. The association is very regular; the more rebellious behaviors during high school the less education afterwards. Eighty percent of the least rebellious went on to some post-high school education; but only half that proportion of the most rebellious did so.

Program of Study. A boy's chances of completing college are closely linked to being in the collge preparatory program in tenth grade.

FIGURE 2-8

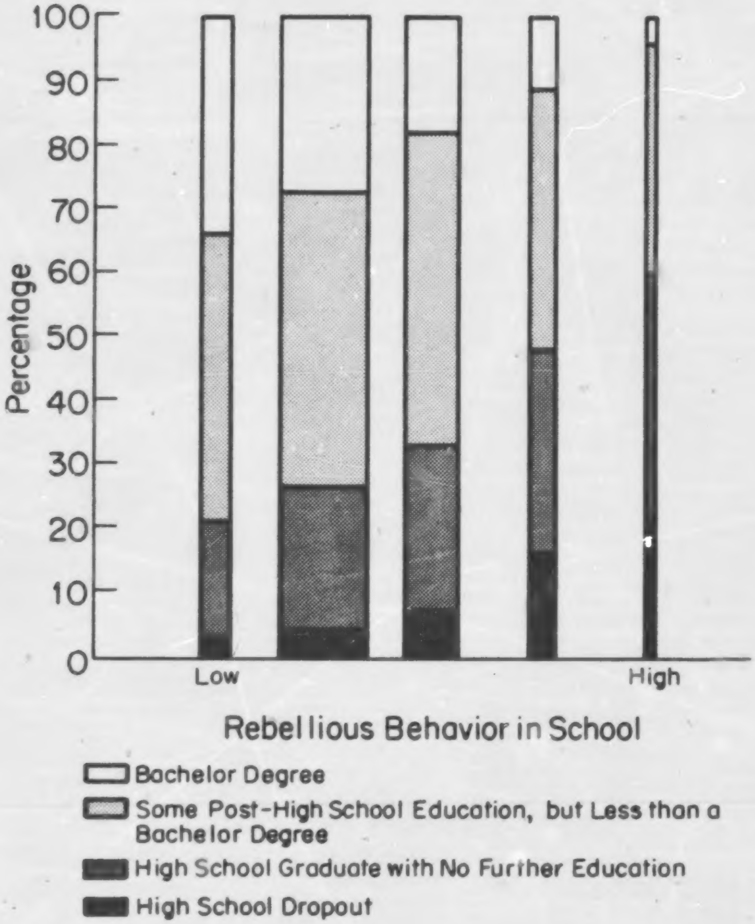
Educational Attainment Related to Classroom Grades



NOTE: The product-moment correlation between the eight-category measure of educational attainment and classroom grades is .53.
The data underlying this figure can be found in Appendix E, Table E-2-8.

FIGURE 2-9

Educational Attainment Related to Rebellious Behavior in School



NOTE: The product-moment correlation between the eight-category measure of educational attainment and the continuous (nonbracketed) measure of rebellious behavior in school is −.29.
The data underlying this figure can be found in Appendix E, Table E-2-9.

TABLE 2-4

Multiple Regression Analysis Predicting Educational Attainment from Educational Behaviors

Predictors	r	Beta	T-Ratio of Beta
Grade Failure	.35	.164	7.88
Average Grades: 9th Year	.53	.346	15.22
Number of Hours of Homework	.16	.027	1.35
Rebellious Behavior in School	−.29	−.095	4.55
Curriculum	.45	.261	12.25

Percentage of Variance explained = 38.9 (adjusted = 38.8)

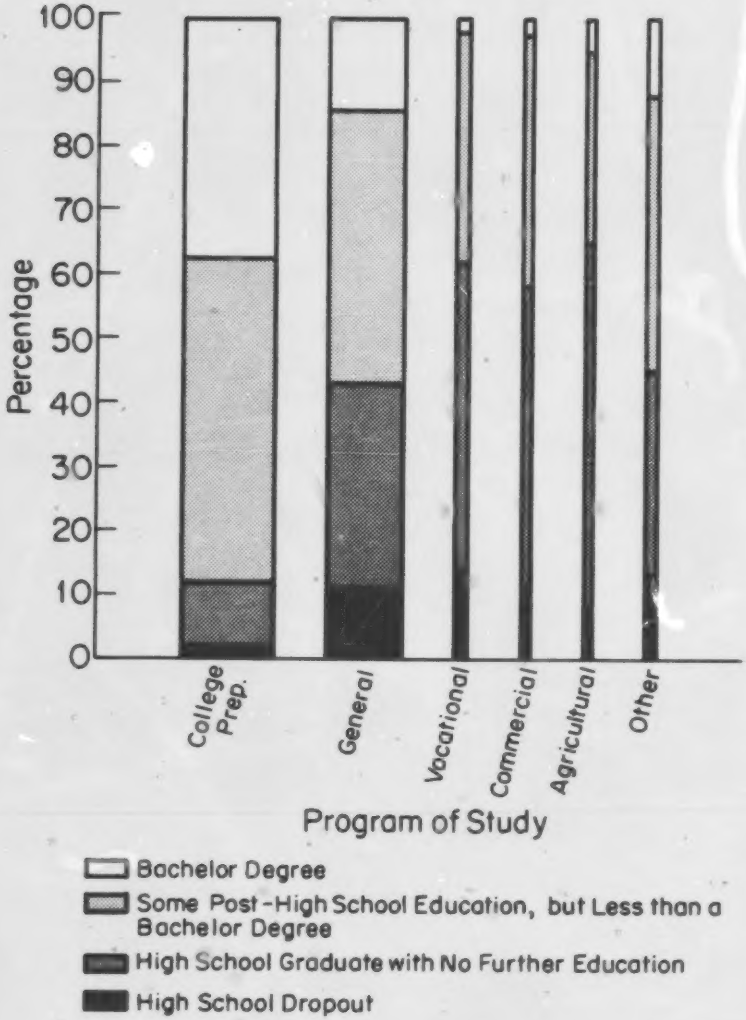
More than one-third (37 percent) of those in the college program in tenth grade actually obtained bachelor degrees within five years of high school. From a different perspective, 45 percent of the sample were in the college program in tenth grade, but they represent 73 percent of those who obtained bachelor degrees. Most of the other bachelor degrees were obtained by those in the general program.

Rather than the extended version of program of study shown in Figure 2-10, we will henceforth use only a dichotomy, college preparatory versus all others. The dichotomy correlates .45 with educational attainment compared to an eta of .47 for the extended version.

Multivariate Analysis. The results of a regression analysis which includes all the educational behaviors are presented in Table 2-4. All variables except the hours spent on homework seem to be of some predictive value. More interesting is what happens when background and ability are controlled. First we assess the relative importance of the several variables by means of a step-wise regression. The three control variables are forced into the equation first; then the others are allowed to enter, one at a time, in order of marginal predictive importance. The process is continued until no variable has a beta whose t-ratio is greater than 1.96 (which would be the .05 level of statistical significance under an assumption of simple random sampling). All of the educational behaviors (except hours of homework) enter the equation under these loose restrictions. The final equation is given in Table 2-5. Under the column headed "Step-Entered," a zero indicates that the corresponding predictor was forced into the equation at the beginning. A "1" indicates that among the remaining predictors this variable (Average Grades: 9th Year) made the largest increment in the variance explained and was the first educational behavior to enter the equation. Curriculum ("2") made the next largest contribution, and so on. The beta and t-ratio values reflect the values estimated in the last equation, with all seven predictors present. The adjusted variance explained is, strictly speaking, not statisti-

FIGURE 2-10

Educational Attainment Related to Program of Study



NOTE: The data underlying this figure can be found in Appendix E, Table E-2-10.

TABLE 2-5

Step-wise Multiple Regression Analysis Predicting Educational Attainment from Background, Ability, and Educational Behaviors

Predictor	Step Entered	r	Beta	T-Ratio
Socioeconomic Level	0	.47	.204	9.43
Number of Siblings	0	−.30	−.061	3.10
Ability Composite	0	.53	.177	7.40
Average Grades: 9th Year	1	.53	.271	12.33
Curriculum	2	.45	.146	6.93
Rebellious Behavior in School	3	−.29	−.094	4.87
Grade Failure	4	.35	.093	4.71

Percentage of Variance Explained = 47.5 (adjusted = 47.3*)

*Step-wise regression procedures make this adjustment unreliable, since they violate some of the assumptions underlying it.

cally appropriate because the adjustment procedure does not take account of the step-wise means of arriving at the final equation. Nevertheless, we will use it as a rough guide, recognizing that it probably is slightly higher than it should be.

One interesting result here is that the direct effect of ability is lessened considerably in the presence of grades. Apparently ability operates partly through being translated into classroom achievements. Ability continues to have some direct effect, as does SEL, but grades are of primary importance. Note that with these seven tenth-grade variables we can account for nearly half (47 percent) of the variance in eventual educational attainment, up from about one-third (35 percent) using only background and ability.

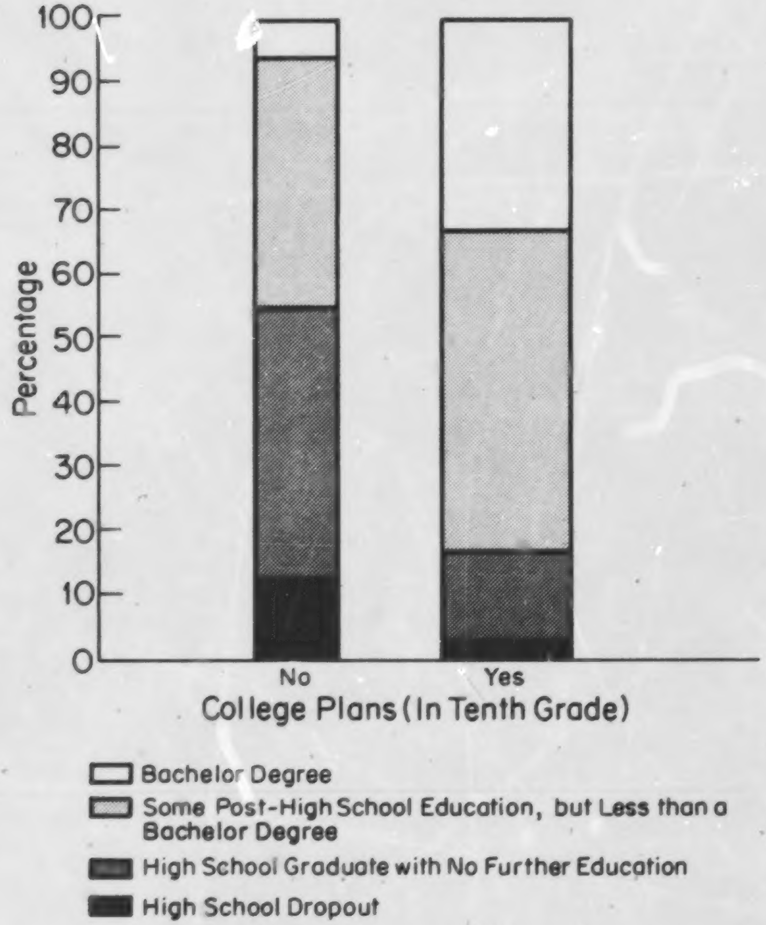
Educational Plans, Values, and Attitudes

While early educational behaviors are primary determinants of educational attainment, there are other, less readily observed factors affecting the behaviors. These more psychological factors include plans, values, and attitudes. The most basic of these, as regards education, is the respondent's plans to go to college.

College Plans. Tenth-grade plans to go to college are often unfulfilled (Figure 2-11). About 14 percent of tenth graders planning to go into some form of post-high school education actually stopped with a high school diploma; another 11 percent received only some vocational/technical training. One in three actually completed a four-year college degree within five years after high school. Change in the other direction—college attendance by those with no tenth-grade plans to attend—also occurs; 46 percent of those whose tenth-grade plans did

FIGURE 2-11

Educational Attainment Related to Tenth-Grade Plans for College or Other Post-High School Education



NOTE: The product-moment correlation between the eight-category measure of educational attainment and college plans is .45.
The data underlying this figure can be found in Appendix E, Table E-2-11.

not include college actually went on to some form of post-high school education. But only 6 percent attained a bachelor degree. The correlation between tenth-grade college plans and later educational attainment is .45, fairly strong for a dichotomy.

Interest in Courses. One questionnaire item asked our tenth-grade respondents to indicate how interesting they found their school courses. Only 7 percent rated their courses as "Very exciting and stimulating," but about 40 percent responded "Quite interesting" and another 40 percent rated them "Fairly interesting."

Those who expressed higher interest in their tenth-grade courses were more likely to complete high school and go on to college; however the relationship is very weak ($r = .10$).

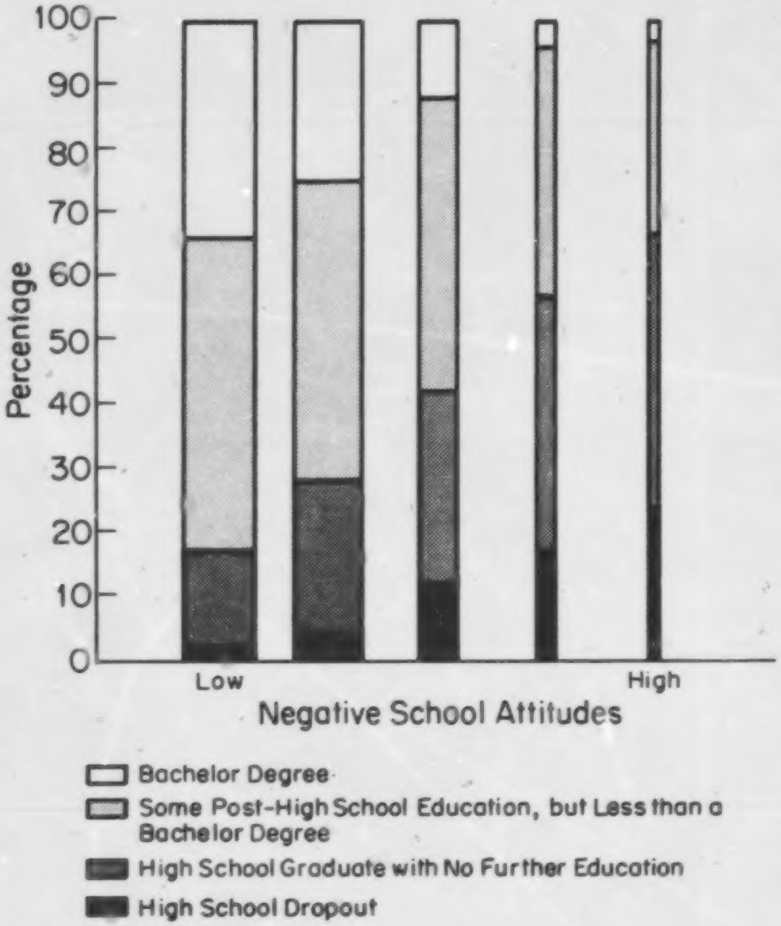
School Attitudes. A fundamental indicator of how well an individual fits into an educational environment would seem to be his attitude toward school and education. Our measures of school attitudes were described in Volume II as follows:

> One portion of the group-administered questionnaire contained 27 items dealing with attitudes or motivation toward school. Examination of the intercorrelations among these items in a pilot study led to the development of one index based on 15 items and another based on eight items.
>
> The first index, which we have termed *positive school attitudes*, contains items that stress the intrinsic value of education; for example, "I think school is important, not only for the practical value, but because learning itself is very worthwhile." . . . Every one of the items is endorsed by at least three-quarters of the respondents, who say they feel this way either "pretty much" or "very much." It should be noted that the items possess a great deal of social acceptability—they sound like the right thing to say, and it may be that some of our respondents are inclined to tell us what they think we want to hear. Taken at face value, the data certainly suggest that most tenth-grade boys have favorable attitudes toward school.
>
> The second index, termed *negative school attitudes*, consists of eight items ranging from general dissatisfaction ("School is very boring for me, and I'm not learning what I feel is important") to a devaluation of school in comparison to other sources of experience ("A real education comes from your own experience and not from the things you learn in school"). The items indicating general dissatisfaction received little endorsement, on the whole, while the items stressing the relative superiority of experience outside school were endorsed more often (pp. 106–108).

The two scales are, of course, inversely related; their product-moment correlation is −.51. They show opposite relationships with educational attainment, negative school attitudes being distinctly stronger ($r = -.39$ versus .25). As Figure 2-12 demonstrates, two-thirds of those with the most negative attitudes received no post-high school education of any kind; in fact, about one-fourth did not even finish high school. For

FIGURE 2-12

Educational Attainment Related to Negative School Attitudes



NOTE: The product-moment correlation between the eight-category measure of educational attainment and the continuous (nonbracketed) measure of negative school attitude is −.39.
The data underlying this figure can be found in Appendix E, Table E-2-12.

TABLE 2-6

Step-wise Multiple Regression Analysis Predicting Educational Attainment from Background, Ability, and Educational Plans and Attitudes

Predictor	Step Entered	r	Beta	T-Ratio
Socioeconomic Level	0	.47	.202	9.08
Number of Siblings	0	−.30	−.087	4.27
Ability Composite	0	.53	.272	11.66
College Plans	1	.45	.212	10.14
Negative School Attitudes	2	−.39	−.154	6.64
Positive School Attitudes	3	.25	.072	3.25

Percentage of Variance Explained = 43.6 (adjusted = 43.4)

the least negative group, 83 percent obtained some post-high school education.

Academic Achievement Value. Tenth-grade respondents were asked to indicate how much value they placed on studying constantly, working hard for academic honors, striving for the top grades, and studying hard for good grades. Tenth-grade respondents' answers to these questions provide some indication of eventual educational attainment (r = .23). Interestingly, responses to the same items in the twelfth grade do not provide any such indication (r = .00).

Multivariate Analysis. When we combine the five educational plans, values, and attitudes measures, we can account for 28 percent of the variance in educational attainment. In the stepwise regression, forcing SEL, number of siblings, and ability to enter the equation first, we can explain 43 percent by adding college plans, negative school attitudes, and positive school attitudes (see Table 2-6).

After controls are incorporated into the equation, the educational plans and attitudes of tenth graders are still strongly related to eventual attainment. College plans, a dichotomy, is no less strong a predictor than is SEL (betas = .212 and .202). Recall that by using a number of observable educational behaviors, along with background and ability, we were able to account for 47 percent of the variance (Table 2-5); we see here that we do nearly as well with the nonbehavioral measures.

Self-Concepts

In order to predict the level of educational attainment, it is important to know not only how one feels about school, but how he sees himself, particularly as compared to his peers. We asked several questions designed to assess these self-concepts.

Self-Concept of School Ability. While ability and grades ought to be effective determinants of one's self-concept of school ability, there is a good deal of variation which is unexplained by those factors. (The multiple-R is .626, which leaves 61 percent of the variance unexplained.) It may be worth noting that most people tend to think of themselves as better than average, rather than below average. In fact, over 80 percent of our 1966 respondents rated themselves as better than average in school ability. In the absence of an "average" point on the response scale, the great majority of those with near average ability chose to rate themselves as being slightly above average.

The measure predicts eventual education fairly well, as Figure 2-13 shows ($r = .45$).[6] Only 44 percent of those who rated themselves below average (in most cases, "slightly" below) obtained any post-high school education, and only 4 percent of them finished college. In contrast, the corresponding figures for the above-average groups are 74 percent and 26 percent.

Self-Ratings of School Performance. Other items asked the respondent for these self-ratings: 1. "How close do you come to doing the best work you are able to do in school?"; 2. "How hard do you think you work in school compared to the other students in your class?"; and 3. "How satisfied are you with the way you're actually doing in school?"

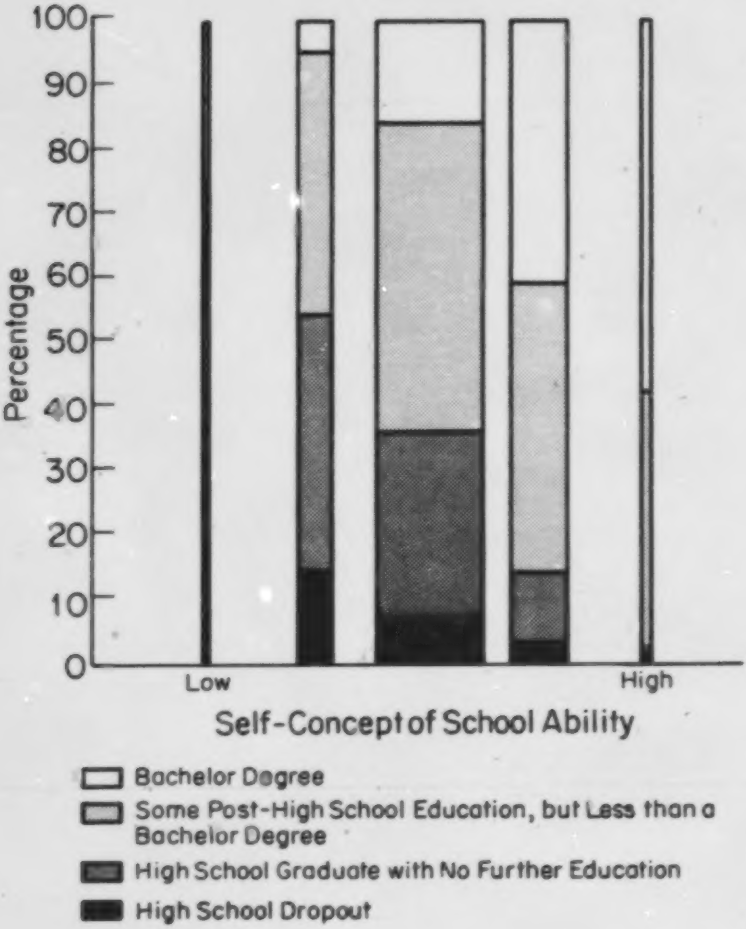
These three items relate to educational attainment, but not very strongly. The first is the weakest ($r = .14$), with those who came close to doing their best generally attaining higher education, except that those who came "very close" attained a bit less than those who came "quite close." A similar pattern is evident in the second item; those who said they worked harder than the other students generally obtained more education, except that the small proportion (2 percent) who claimed that they worked "much harder" obtained somewhat less than those who reported that they worked "harder" ($r = .25$; eta = .28). Finally, those who were more satisfied with the way they were doing in school obtained more education ($r = .20$).

Self-Esteem. A final measure of self-concept is self-esteem, about which we will have considerable to say in Chapter 5. Here we note that it correlates .27 with eventual attainment. The relationship is quite regular. Almost half (46 percent) of those lowest in self-esteem finished their education with a high school diploma or less; almost nine of 10 (88 percent) in the highest self-esteem category continued their education beyond high school. Only 13 percent of the lowest group attained bachelor degrees, compared to 43 percent of the highest group.

Multivariate Analysis. Combining the five self-concept measures in a single equation gives the results in Table 2-7. The self-concept of school ability obviously carries the lion's share of the prediction; alone, it explains 20.3 percent. Still, the item which taps how hard the respondent

FIGURE 2-13

Educational Attainment Related to Self-Concept of School Ability



NOTE: The product-moment correlation between the eight-category measure of educational attainment and self-concept of school ability is .45.
The data underlying this figure can be found in Appendix E, Table E-2-13.

TABLE 2-7

Multiple Regression Analysis Predicting Educational Attainment from Self-Concepts

Predictor	r	Beta	T-Ratio
Self-Concept of School Ability	.45	.367	15.27
Does Best Work in School	.14	−.003	0.12
Works Harder than Average	.25	.126	5.19
Satisfaction with School Work	.20	.062	2.52
Self-Esteem	.27	.107	4.44

Percentage of Variance Explained = 23.7 (adjusted = 23.4)

TABLE 2-8

Step-wise Multiple Regression Analysis Predicting Educational Attainment from Background, Ability, and Self-Concepts

Predictor	Step Entered	r	Beta	T-Ratio
Socioeconomic Level	0	.47	.230	10.09
Number of Siblings	0	−.30	−.085	4.04
Ability Composite	0	.53	.287	11.16
Self-Concept of School Ability	1	.45	.120	4.82
Works Harder than Average	2	.25	.088	4.08
Self-Esteem	3	.27	.087	4.07
Does Best Work in School	4	.14	.057	2.49
Satisfaction with School Work	5	.20	.048	2.17

Percentage of Variance Explained = 40.1 (adjusted = 39.8)

sees himself as working relative to the others is not trivial, nor is global self-esteem.

From the data in Table 2-7, we would not be surprised if only the three variables whose beta coefficients exceed .10 were to enter the step-wise regression. But in fact, all five do so (Table 2-8). Note that by using self-concepts as additional predictors, we can explain 40 percent of the variance in educational attainment, an appreciable increase over the 35 percent explained by background and ability alone.

Occupational Attitudes and Aspirations

Occupational attitudes and aspirations as well as early educational attitudes and aspirations should be closely linked to educational outcomes. In fact, it is likely that in many cases occupational aspirations precede educational plans. The decision to become a doctor necessitates the decision to go to college. A decision to become a rock musician probably lessens any aspiration for college.

Ambitious Job Attitudes. This scale, which is discussed extensively in Chapter 8, provides an overall assessment of occupational ambitions. It positively weights items dealing with learning new things and getting ahead, and negatively weights items dealing with avoiding hard work or being bossed. The moderately strong association between job attitudes and educational attainment is displayed in Figure 2-14. The expected positive relationship overall is apparent, but with a slight departure from monotonicity at the highest level (eta = .29, r = .27) In the lowest group less than 10 percent completed college, compared to 35 percent for the next-to-highest. But surprisingly, only 20 percent of the highest attitude group completed college. We may speculate that those indicating *very* ambitious job attitudes may be over-aspiring relative to their abilities. But more likely is the hypothesis suggested in Volume III: "that the more sophisticated college-bound respondents tended to avoid the extreme positions on our response scales and/or tended to provide a more complex mixture of answers" (p. 87).

Occupational Aspirations. Each respondent in tenth grade was asked what sort of work he might do for a living. The responses were coded into the Duncan socioeconomic status scale. Occupational aspirations showed the expected strong relationship with later educational attainment (r = .47), as displayed in Figure 2-15. Of those with the highest aspirations, 89 percent obtained some post-high school education; only 36 percent of those in the lowest aspiration category did so. More than one in three (35 percent) of the top category completed college, compared to one in 25 (4 percent) of the bottom category.

Multivariate Analysis. For the regression analysis, instead of the single measure of ambitious job attitudes we used its two subindexes. The first consists of the positively weighted items ("job that pays off"); the second consists of the negatively weighted items ("job that doesn't bug me"). These two plus the status of aspired occupation are moderately strong predictors of educational attainment (25 percent of variance accounted for). All three contributed in the step-wise procedure, for a total explained variance of 39 percent (see Table 2-9). Status of aspired occupation is clearly an important factor in education. Even when socioeconomic background and intellectual ability are controlled, it has a major impact (beta = .233).

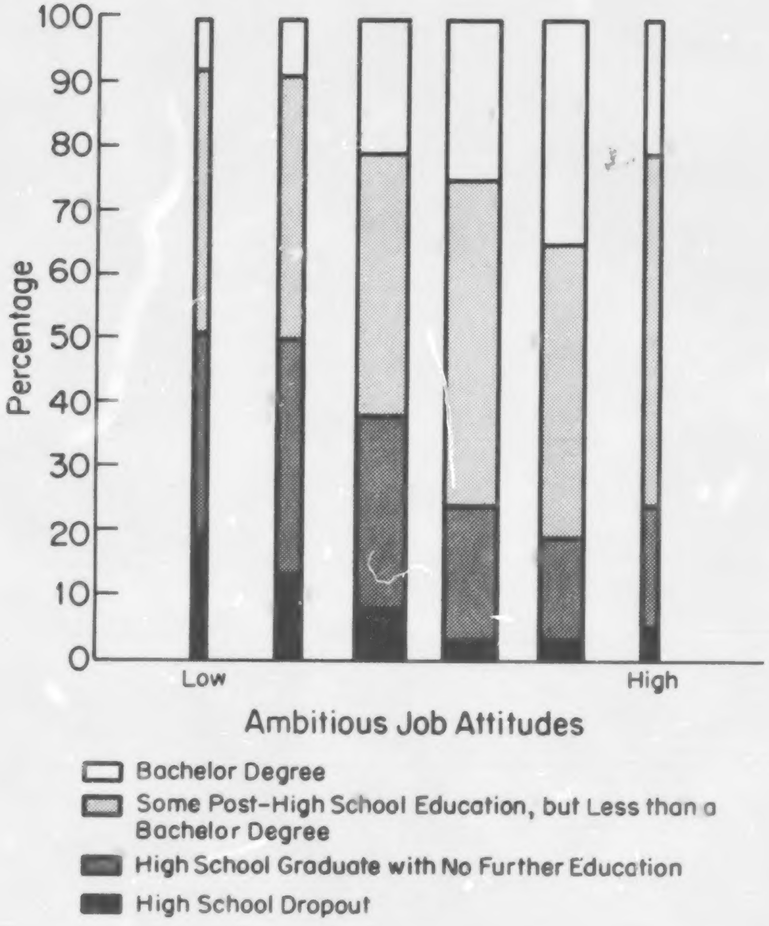
Delinquent Behavior

The final set of variables were derived from items included in a "Confidential Information Questionnaire." The items referred to various deviant behaviors, most of them illegal. We will present three separate indexes constructed from the 26 items. There is some small overlap of items between the first and each of the other two indexes.

Delinquent Behavior in School. This index is comprised of items dealing with disruptive or delinquent behaviors in school, ranging from skipping a day and smoking against the rules to hitting a teacher or

FIGURE 2-14

Educational Attainment Related to Ambitious Job Attitudes

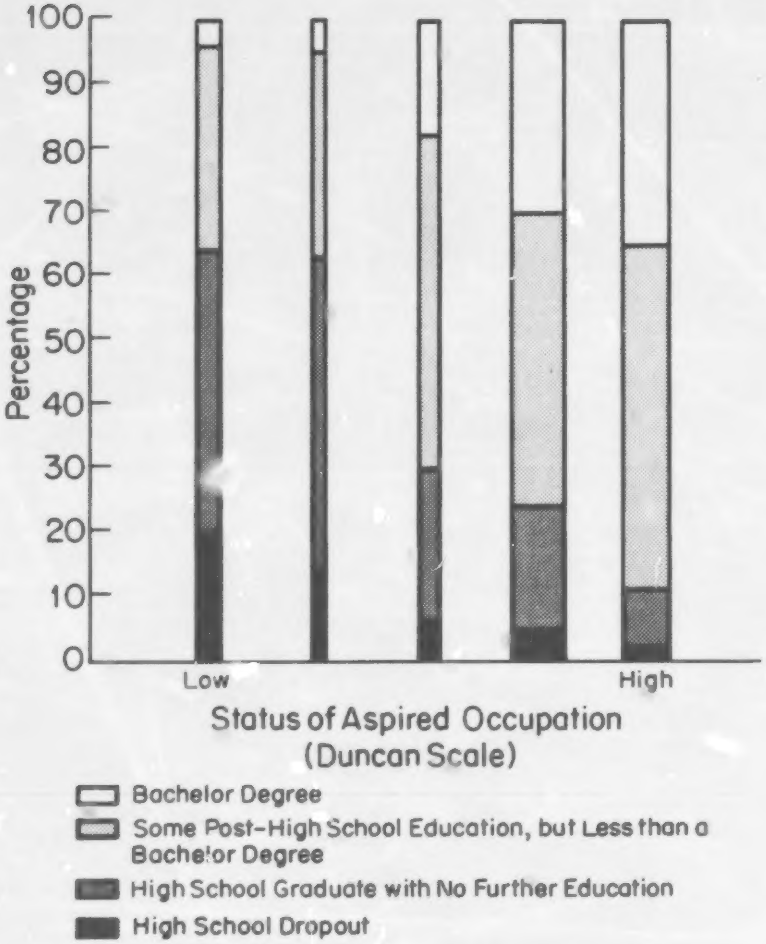


NOTE: The product-moment correlation between the eight-category measure of educational attainment and the continuous (nonbracketed) measure of ambitious job attitudes is .27.

The data underlying this figure can be found in Appendix E, Table E-2-14.

FIGURE 2-15

Educational Attainment Related to Status of Aspired Occupation



NOTE: The product-moment correlation between the eight-category measure of educational attainment and the continuous (nonbracketed) measure of status of aspired occupation is .47.

The data underlying this figure can be found in Appendix E, Table E-2-15.

TABLE 2-9

Step-wise Multiple Linear Regression Predicting Educational Attainment from Background, Ability, and Occupational Attitudes and Aspirations

Predictor	Step Entered	r	Beta	T-Ratio
Socioeconomic Level	0	.47	.211	9.15
Number of Siblings	0	−.30	−.076	3.57
Ability Composite	0	.53	.274	11.08
Status of Aspired Occupation	1	.47	.233	10.41
Job that Doesn't Bug Me	2	−.20	−.060	2.89
Job that Pays Off	3	.13	.052	2.55

Percentage of Variance Explained = 39.4 (adjusted = 39.2)

damaging school property. It is rather strongly, and negatively, related to eventual attainment ($r = -.32$). (The product-moment tends to understate the degree of association because of the highly skewed distribution. The unstandardized regression coefficient is equal to −1.14, which means that for every unit increase on the delinquency scale, there is a decrease of 1.14 units on the eight-category version of educational attainment.) As Figure 2-16 shows, the proportion of those in the most delinquent group who stopped their education at a high school diploma is four times that of the least delinquent group, 64 percent versus 16 percent.

Interpersonal Aggression. This index is comprised of nine items which involve some physical aggression—or threat thereof—against other persons. The measure correlates a bit less strongly than the school-based measure ($r = -.25$), but otherwise the relationship is quite similar.

Theft and Vandalism. Instead of aggressive behavior against persons, the theft and vandalism index is comprised of what might be called crimes against property. These range from petty theft to arson. Again the relationship is negative ($r = -.12$), but is considerably less strong than the interpersonal aggression index.

Multivariate Analysis. Delinquent behavior in tenth grade does not explain much of the variance in eventual educational attainment. All three indexes together account for just 12 percent. In addition, only one index is of importance in the step-wise procedure, as Table 2-10 shows.

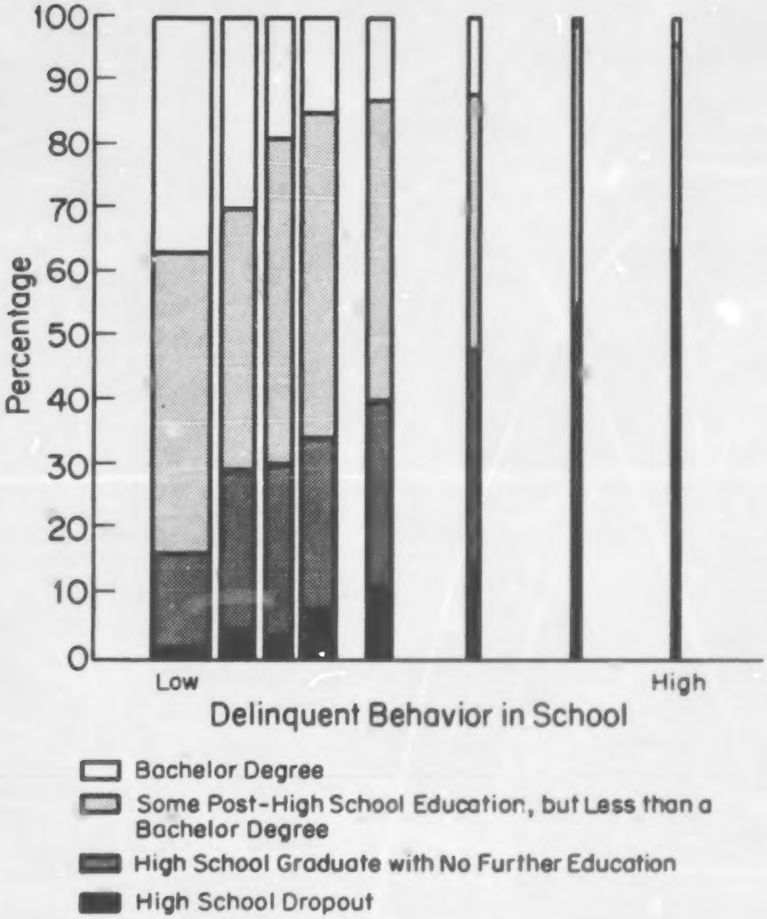
Note that much of the importance of delinquent behavior in school is quite independent of background and ability. Within levels of background and ability, the more delinquent are likely to attain less education.

Additional Personality Dimensions Linked to Educational Attainment

A number of other variables were analyzed in our earlier work, and in some cases moderate relationships with educational attainment were

FIGURE 2-16

Educational Attainment Related to Delinquent Behavior in School



NOTE: The product-moment correlation between the eight-category measure of educational attainment and the continuous (nonbracketed) measure of delinquent behavior in school is −.32.
The data underlying this figure can be found in Appendix E, Table E-2-16.

TABLE 2-10

Step-wise Multiple Linear Regression Predicting Educational Attainment from Background, Ability, and Delinquent Behaviors

Predictors	Step Entered	r	Beta	T-Ratio
Socioeconomic Level	0	.47	.236	10.35
Number of Siblings	0	−.30	−.086	4.06
Ability Composite	0	.53	.351	15.30
Delinquent Behavior in School	1	−.32	−.219	11.00

Percentage of Variance Explained = 39.2 (adjusted = 39.0)

found. None of these other variables, however, proved sufficiently strong to make any unique contribution in our full-scale multivariate analyses. Moreover, these other variables do not fit neatly into the several conceptual categories introduced above. Accordingly, our reporting in this volume is limited to a brief listing of these variables and their relationship with later educational attainment. (For further detail see Volume III of this series and O'Malley et al., 1977.)

Test Anxiety. One might expect that a high school student's level of anxiety about tests would relate to eventual educational attainment. The measure of test anxiety used in this study is an adaptation from the Mandler-Sarason (1952) Test Anxiety Questionnaire. Atkinson (1964) has used the measure as an indicator of the need to avoid failure. High levels of test anxiety would presumably indicate a negative affect associated with schooling; therefore, we expected tenth-grade test anxiety to relate negatively to later educational attainment. The results match our expectations, although the effect is not very strong ($r = -.16$).

Need for Self-Development. In theory, people attend school for purposes of self-development. Thus it seems reasonable to suppose that those individuals who have relatively strong needs for self-development are likely to be above average in their educational attainment. Our measure of this dimension was an index of 15 questionnaire items, an example of which is: "I look for opportunities to better myself." We found a moderate relationship between this variable and educational attainment ($r = .28$). Tenth graders who expressed a high need for self-development attained considerably higher education; 41 percent of the highest category earned bachelor degrees, compared to only 11 percent of the lowest.

A closely related variable, the need for self-utilization, showed a very similar, though slightly weaker, pattern of relationship with educational attainment ($r = .21$).

Internal Control. Rotter (1963, 1966) has used the term "internal control" to designate the feeling that an individual controls his own fortunes, while "external control" refers to the notion that one is swept along by outside events. Coleman found that an important correlate of school achievement is " . . . the extent to which an individual feels that he has some control over his own destiny" (1966, p. 23). Our own findings confirm and extend that conclusion: feelings of internal control or personal efficacy during tenth grade correlated positively with later educational attainment (r = .25).

Other Measures. A number of other characteristics of our respondents in tenth grade showed modest correlations with later educational attainment. Attained education was higher among those who described themselves as relatively happy (r = .13) and supportive of conventional social values (r = .23). Educational attainment was somewhat below average for those who rated high in negative affective states (r = −.17), somatic (psychosomatic) symptoms (r = −.25), and impulse to aggression (r = −.17).

Multivariate Analysis Across Predictor Sets

We have touched on a great many predictors of attainment in this chapter and have found that a good number (24, to be precise) of these predictors maintain some degree of effect after controls for background and ability were applied. Next we look across groups at the total set. We put all 24 predictors into a step-wise procedure, again forcing SEL, number of siblings, and ability into the equation first.

Table 2-11 shows the results through six steps. The first six variables to enter are all education related. Together with background and ability they explain more than half the variance in eventual educational attainment (50.6 percent). At this point in the step-wise procedure, no other variable could add more than .2 percent; the beta for the next variable to enter (need for self-development) is .048, with a t-ratio less than 2.00. Since more than half the variance can be explained, we conclude that the determinants of educational attainment are well-known by tenth grade. Those determinants are the indicators of successful experiences in, and a positive attitude toward, schooling. Background and ability continue to have moderate direct effects, but their impact is primarily through the schooling variables. This is not a particularly profound finding, but it certainly underscores the importance of educational behaviors and experiences during the pre-high school years.

TABLE 2-11

Step-wise Multiple Regression Analysis Predicting Educational Attainment from Final Set of Variables

Predictor	Step Entered	r	Beta	T-Ratio
Socioeconomic Level	0	.47	.178	8.43
Number of Siblings	0	−.30	−.066	3.47
Ability Composite	0	.53	.147	6.32
Average Grades: 9th Year	1	.53	.231	10.76
College Plans	2	.45	.141	6.91
Negative School Attitudes	3	−.39	−.106	5.27
Delinquent Behavior in School	4	−.32	−.092	4.70
Curriculum	5	.45	.105	4.99
Grade Failure	6	.35	.073	3.78

Percentage of Variance Explained = 50.8 (adjusted = 50.6)

Notes

[1] See *Youth in Transition*, Vol. II, Appendix B for a detailed description of the development of the summary measure of socioeconomic level.

[2] In the sections on multivariate analysis, we use multiple linear regression both to assess the total impact of a number of variables on educational attainment, and also to assess the effect of each variable controlling for a number of other variables.

[3] The total relationship, linear and nonlinear, is .23 (eta); the linear relationship is .20 (*r*). The difference is not totally trivial, nor is it uninteresting; but in the interest of parsimony, it will be ignored.

[4] The introduction of controls is via a Multiple Classification Analysis. The family religious preference eta of .283 is reduced to a beta of .091 controlling SEL, number of siblings, ability, grades, college plans, curriculum, negative school attitudes, and rebellious behavior in school.

[5] The multiple regression analysis reported in this section, and all others in this chapter, make use of data from the large correlation matrix described in the Preface and included in O'Malley et al., 1977.

[6] This illustrates a point: it does not matter that the scale is not very accurate absolutely, so long as it rank orders the groups accurately.

Chapter 3

OCCUPATIONAL ATTAINMENTS FIVE YEARS AFTER HIGH SCHOOL

One of the strongest selling points for education has been that higher levels of education lead to better jobs—better in the sense of status and income, freedom from insecurity (risk of unemployment), and satisfying and rewarding working experiences. This chapter and the next examine the ways in which educational attainment, and a wide range of other factors, may affect occupational outcomes five years beyond high school. This chapter examines three major criteria of occupational attainment: 1. job type or status, 2. employment—is the respondent employed or unemployed?—and 3. hourly wage rate. But these three rather objective dimensions of attainment are by no means the only, or perhaps even the most important, indicators of occupational success. Accordingly, Chapter 4 deals with a measure of job satisfaction and a number of subjective assessments of job characteristics or working conditions.

A primary focus of this chapter is on the ways that educational attainment is related to job status, employment (versus unemployment), and hourly wage rate. Particularly interesting is the comparison between high school dropouts and high school graduates who have no post-high school education. We also will look at a number of other variables which could influence an individual's occupational outcomes. Some of these are contemporaneous with the occupational behaviors. They describe what might be called environmental conditions such as urbanicity, geographical region of the country, prevailing employment rates in the county in which the respondent lives, the prevailing wage rates for unskilled workers, and the prevailing market for unskilled male workers. Two other variables are not so much environmental conditions as experiences: military service and marital/parental status.

There are, of course, a variety of additional factors which could influence the type of job an individual obtains, family background and ability in particular. From the previous chapter, we know that they influence the amount of education attained. Any observed association between educational and occupational outcomes could actually be a result of these earlier, and causally prior, variables. Therefore, in determining the effects of education on occupational outcomes, we found it useful to control socioeconomic level and number of siblings, both key indicators of family background, as well as intellectual ability. The same three, plus educational attainment, are controlled in examining the effects of post-high school environments and experiences. Although educational attainment is not so obviously causally prior to such experiences, education is in many ways a very fundamental variable, and our theoretical biases are such that we do not want to ascribe to a variable such as military service any effects which could equally well (and more parsimoniously) be ascribed to education.

The analyses in this chapter exclude a number of respondents. We are interested in early occupational attainments, but at the time of the last survey, five years after high school graduation, some respondents had not yet completed their education, and others had only very recently completed theirs. Many respondents were still taking academic courses, so their current occupations may have been temporary. Some respondents were in the armed forces; since our measures are best suited to the civilian work force, respondents in the military (in 1974) are not included in the ensuing analyses. The reduced set of respondents for analyses in this chapter numbers a maximum of 1,052. Missing data, particularly in multivariate analyses, usually result in a smaller number for any given analysis. As we have demonstrated elsewhere, this reduction in the number of respondents leads to clearer, and stronger, relationships with occupational outcomes, while relationships among other variables are virtually unchanged (see Bachman and O'Malley, 1977, especially Table 2).

Job Type and Status

Table 3-1 classifies respondents by the type of job they held as of Spring 1974 (using a Census Bureau classification system). For the unemployed respondents, the type refers to their most recent job. Remember, this distribution reflects only those respondents who were in the labor force. It would not be accurate to generalize from the table that, for example, 28.3 percent of all 23-year-old men are operatives or ser-

TABLE 3-1

Census Category and Duncan Status of Jobs at Age 23

Census Category	N	Percentage	Duncan Status
1. Professional/Technical	155	14.7	67.2
2. Manager/Proprietor	100	9.5	61.4
3. Clerical/Sales	115	10.9	45.5
4. Craftsmen	207	19.7	31.4
5. Operatives and Service Workers	298	28.3	20.0
6. Non-Farm Laborers	86	8.2	8.6
7. Farmers	23	2.2	13.0
8. Inap., NA	68	6.5	—
Total	1052	100.0	Mean = 35.8 SD = 22.3

vice workers. Many 23-year-old men are still engaged in educational pursuits, the great majority of whom will eventually be professional or technical workers. As the table demonstrates, a wide occupational range is represented in our sample.

Also shown in Table 3-1 is the average value on the Duncan (1961) status scale for each occupation group. There are great differences among the groups, with a range from 8.6 to 67.2. The eta value of .88 is very high, indicating that the two methods of job classification are essentially interchangeable for some purposes. Because the Duncan status scale is more amenable to a variety of analytic procedures, and particularly because it is more suitable for correlational analyses, we will use it rather than the Census Bureau categories.

The Use of Multiple Classification Analysis

In determining the effects of educational attainment, environments, and experiences on occupational outcomes, we chose to control family background and intellectual ability using Multiple Classification Analysis (MCA), described by Andrews et al. (1973). MCA served our purposes better than the linear regression used in the preceding chapter, because several of the predictors are not linear in their effects. In addition, the county level variables have a high proportion of missing data, a condition which is not problematic with MCA.

A key feature of the MCA technique is its ability to show the effects of any predictor, both before and after taking into account the effects of all other predictors. The program provides an "adjusted mean" for each category of each predictor. This adjusted mean indicates what the mean would have been had the members of the category been exactly like the total population in the analysis with respect to its distribution over all the other predictor classifications. In other words, the adjusted means are the results of controlling for other predictors.

TABLE 3-2

MCA: Occupational Attainments Related to Background and Ability

	Duncan Status		Unemployment Rate		Hourly Wage Rate	
Predictor	eta	beta	eta	beta	eta	beta
Socioeconomic Level	.251	.130	.140	.149	.121	.133
Number of Siblings	.215	.123	.107	.096	.108	.118
Ability Composite	.361	.310	.108	.114	.069	.071
Multiple Correlation						
Coefficient R^2 =		.162		.041		.033
R^2 (Adjusted) =		.145		.023		.014

Two important measures of association are available for each predictor. Eta is a measure of the ability of the predictor to explain variation in the dependent variable. Beta is analogous to eta, but is based on the *adjusted* means rather than on the unadjusted (raw) means. Beta provides a measure of the ability of the predictor to explain variation in the dependent variable after adjusting for the effects of all the other predictors.

Occupational Attainments Linked to Family Background and Ability

The multivariate relationships among socioeconomic level (SEL), number of siblings, intellectual ability, and the three occupational attainments are shown in Table 3-2. Only in the case of Duncan status are the predictors, especially ability, able to explan a substantively significant amount of variation in attainment (14.5 percent). Employment and hourly wages provide much less explanation, 2.3 percent and 1.4 percent of variance, respectively. As indicated earlier, other investigators also have found these dimensions difficult to explain. (See especially Kohen, 1973.) An implication of Table 3-2 is that controlling family background and ability will not result in very much actual "adjusting" of effects on employment and wage rates. The overwhelming proportion of variance in these dimensions, and in job status also, remains unexplained by background and ability.

Occupational Attainments Linked to Educational Attainment

Table 3-3 shows the relationship between educational attainment and job type. Note that the great majority of high school dropouts (73 percent) were employed in the categories of craftsmen, operatives and service workers, and nonfarm laborers. Only 17 percent of those with a bachelor degree were in those categories, with the majority of the college graduates in professional or technical jobs. Clearly, a college degree is associated with much higher status jobs. But can anything similar be said for a high school diploma? Do high school graduates hold higher

TABLE 3-3

Census Categories and Educational Attainment at Age 23

					Educational Attainment					
	Total		Dropout		Graduate		Some College		Bachelor	
Census Category	N	%	N	%	N	%	N	%	N	%
1. Professional/ Technical	155	14.7	0	0	14	4.0	46	11.3	95	51.1
2. Manager/ Proprietor	100	9.5	11	10.5	20	5.6	45	11.1	24	12.9
3. Clerical/ Sales	115	10.9	3	2.9	35	9.9	52	12.8	25	13.4
4. Craftsmen	207	19.7	22	21.0	87	24.6	93	22.9	5	2.7
5. Operatives/ Service Workers	298	28.3	39	37.1	129	36.4	111	27.3	19	10.2
6. Non-Farm Laborers	86	8.2	16	15.2	37	10.5	26	6.4	7	3.8
7. Farmers	23	2.2	1	1.0	9	2.5	9	2.2	4	2.2
8. Inap., NA	68	6.5	13	12.4	23	6.5	25	6.1	7	3.8
Total	1052	100.0	105	100.1	354	100.0	407	100.1	186	100.1

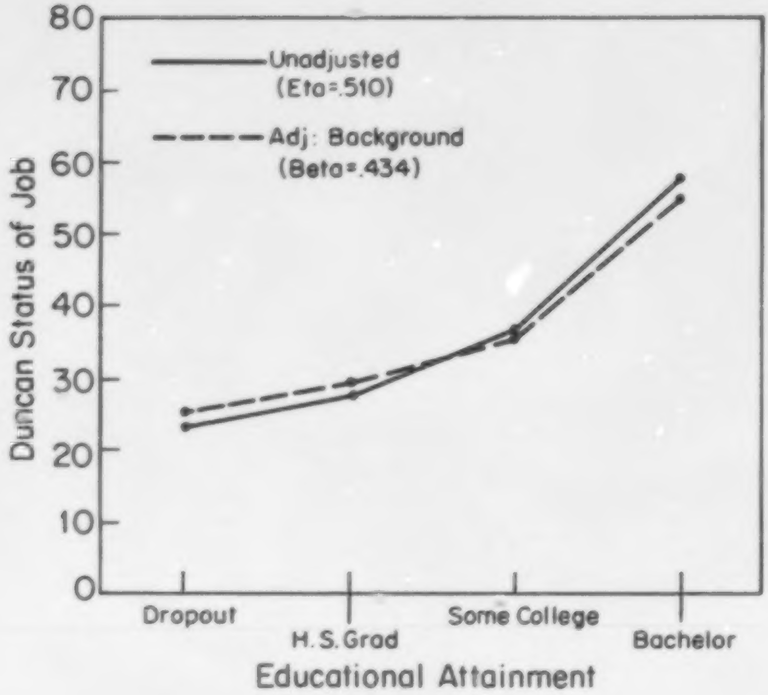
status jobs than dropouts? Fifty-two percent of the dropouts were in the relatively low status occupations of operatives and service workers, and nonfarm laborers. For the high school graduates with no post-high school education, only slightly fewer were in these categories (47 percent). Indeed, dropouts and those with only a high school diploma are distributed quite similarly across all the job categories in Table 3-3. The biggest difference is in the clerical and sales category, which accounts for 10 percent of the graduates but only 3 percent of the dropouts.

Another way to look at the relationship between education and status is to use the Duncan scale. The solid line in Figure 3-1 indicates the mean scores for the four education groups. The eta of .510 substantiates the strong association between education and job status. In particular, the figure shows that college graduates were substantially different from all lesser levels of educational attainment.

Figures 3-1 shows little status difference between dropouts and graduates. The average Duncan score status for the dropouts is 23.3, compared to 27.4 for the graduates. Since the standard deviation in each group is about 17, the difference in means would be statistically significant only under the most lenient of assumptions (one-tailed test, simple random sampling, significance level of .05, t = 1.86). This small difference is further reduced when the controls for background and ability are introduced, as indicated by the broken line in Figure 3-1. The difference between dropouts (26.5) and graduates (29.3) is only 2.8 points on the scale, well under 20 percent of a standard deviation.

FIGURE 3-1

Duncan Status of Job Related to Educational Attainment



NOTE: The data underlying this figure can be found in Appendix E, Table E-3-1.

The very substantial beta of .434 in Figure 3-1 indicates that while a small part of the association between education and status is shared with background and ability, education accounts for nearly all of the differences in status between college graduates, college dropouts, and those who never enter college.

Table 3-4 displays unemployment and wage rates for different levels of educational attainment. The data show clearly that high school dropouts are nearly twice as likely to be unemployed as are high school graduates (15.7 percent vs. 8.3 percent). It does not necessarily follow that dropping out is what causes increased unemployment. There are

TABLE 3-4

Unemployment and Wage Rates Related to Educational Attainment

	Percentage Unemployed		Hourly Wage Rate	
Educational Attainment	unadj	adj*	unadj	adj*
Dropout	15.7	15.4	4.12	4.24
Graduates	8.3	7.9	3.93	3.92
Some College	7.0	6.7	4.05	4.03
Bachelors	7.2	8.5	3.99	3.99
eta =	.091		.042	
beta =		.089		.056

*Adjusted for socioeconomic level, number of siblings, and ability.

other possibilities, the most obvious of which is that those factors which contribute to or cause dropping out also cause greater unemployment. But, as the adjusted means show, there is no attenuation of the dropouts' disadvantage when we control background and ability.

Since education is linked to differences in job status and in rates of unemployment, we might also expect it to be linked to differences in hourly wages. But as the table shows, such is not the case for hourly wages five years beyond high school. In fact, high school dropouts had the highest hourly wage rates. This is somewhat surprising. Despite dropouts' relative disadvantage in status and rate of employment, those who held jobs did not seem to be suffering from lower wages. The difference between the dropouts and high school graduates with no additional education is not statistically significant, but the *lack* of such a difference is substantively significant. As noted earlier, the lack of hourly wage differences does not necessarily imply no differences in income. A higher incidence of unemployment could result in less yearly income for dropouts than graduates. In fact, that is exactly what we found. In response to the question which asked for yearly income, dropouts reported incomes which averaged around $6,720, while graduates averaged $7,100. This difference also falls short of statistical significance. (Other respondents with some college but no bachelor degree also did not differ significantly from dropouts or graduates in 1973 income. Most of the respondents with college degrees were not in the labor force for the entire year, so their data were not examined.)

We can summarize our finding linking educational attainment to occupational outcomes as follows:

1. There is a strong association between educational level and job status. College graduates held substantially higher status jobs, on the average, while there were only rather small differences among the other

educational levels. In particular, those with no education beyond high school showed very little status advantage over high school dropouts.

2. There are appreciable differences in unemployment rates linked to education level, but in this case the distinction lies between high school dropouts and all others. Dropouts had about double the rate of unemployment found among the other groups.

3. Hourly wages show no systematic differences linked to educational attainment; however, we are dealing with hourly wage rates only five years after high school. After a longer time interval it seems certain that wage rate differences linked to education and job status will emerge quite clearly.

4. Controls for family background and ability have rather little effect on the above relationships. Thus the relationships between educational attainment and occupational outcomes cannot be dismissed as simply reflecting "input differences" in socioeconomic level or tested academic ability.

Occupational Attainments Linked to Environments and Experiences

We will now look at the relationship between occupational attainments and a number of other variables which could have some effect on occupational behaviors.

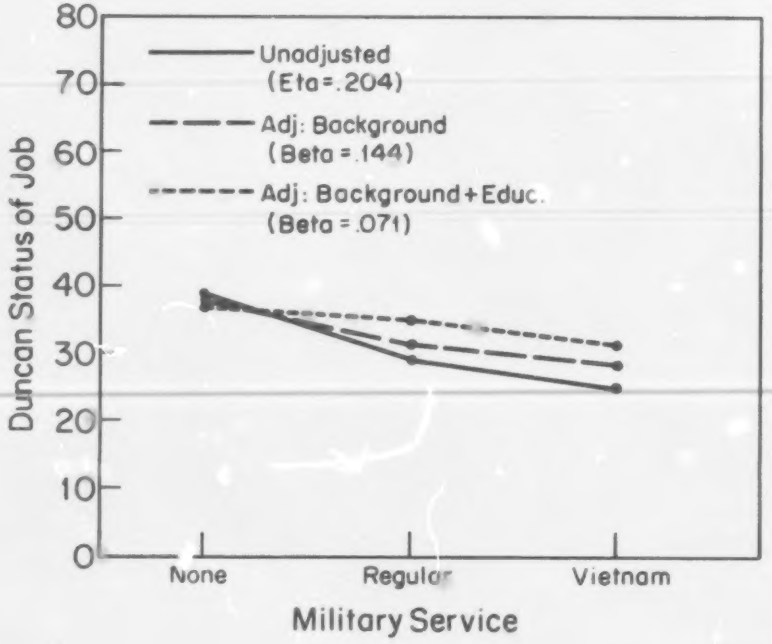
Past Military Service. We group our sample into three categories depending on their military service: (1) those who did not serve in the armed forces, $N = 745$; (2) those who served on active duty, but not in Vietnam, $N = 132$; and (3) those who served in Vietnam, $N = 83$. A number of respondents served in the National Guard or in Reserves, but these have been excluded from analyses because of their ambiguous status vis-a-vis military service. Since this chapter deals with civilian occupational attainments, we have excluded those in the armed forces at the time of the 1974 survey. Thus, it is more accurate to say we are dealing with past military service or veteran status.

Figure 3-2 shows the average job status rankings for the three groups. The average Duncan scores for both veteran categories are lower than for the civilians. Table 3-5 shows that veterans were more likely to be unemployed than were nonveterans. Only 7.1 percent of the nonservice group was unemployed compared to 13.1 percent and 12.3 percent for the service groups. These differences are not entirely trivial; nor is the interpretation of the findings trivial. Why should military service make finding employment in a good job more difficult? Possibly the seeming deleterious effect of military service is a result of other, more fundamental factors.

When we control for socioeconomic level, number of siblings, and ability, the association between military service and status is reduced

FIGURE 3-2

Duncan Status of Job Related to Military Service



NOTE: The data underlying this figure can be found in Appendix E, Table E-3-2.

TABLE 3-5

Unemployment by Military Service

Military Service	Percentage of Unemployment unadj	adj*	adj†
None	7.1	7.2	7.2
Regular	13.1	12.4	12.8
Vietnam	12.3	12.1	12.1
eta =	.086		
beta =		.075	.081

*Adjusted for socioeconomic level, number of siblings, and ability.

†Adjusted for socioeconomic level, number of siblings, ability, and educational attainment.

from an eta of .204 to a beta of .144. Controlling education reduces the effect still further, down to a beta of .071. The data lead to the clear conclusion that military service does not result in lower status jobs. Rather, military service is associated with less advantage in background, ability, and education.

A similar interpretation cannot be applied to the higher levels of unemployment experienced by veterans, however. The data in Table 3-5 indicate that adjustments for background, ability, and education do not alter the 5 percent higher rate of unemployment among veterans. Our data do not provide a basis on which to account for this higher rate of unemployment beyond what we have already indicated, but we can offer a few speculations. The higher unemployment rates might simply reflect the fact that those with military experience had spent less time in the civilian labor market and thus were less likely to have settled into secure jobs. Alternatively, those who had greater difficulties in finding jobs when they left high school might have been more likely to enlist, and after their tour of duty they continued to have greater than average difficulty in getting and keeping a job. Still another possibility should be mentioned, even though we consider it rather unlikely: Contrary to the claims of military recruiters, something about military experience itself may have made it more difficult for some veterans to find and retain jobs in the civilian sector.

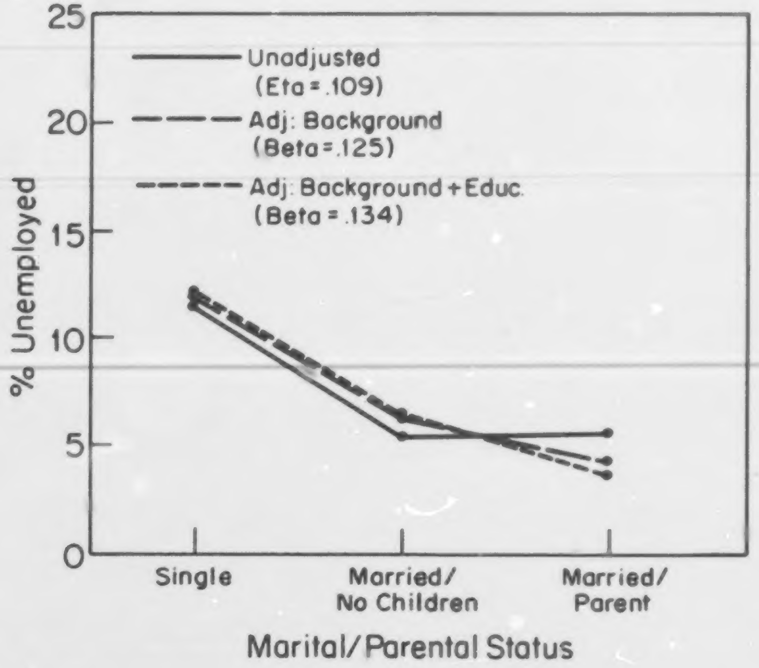
In any event, the status and employment differences noted above did not carry over into hourly wages; those who had been on active duty, whether or not in Vietnam, averaged $4.03 per hour, compared to $4.00 per hour for nonveterans (eta = .054).

Marital/Parental Status. For this analysis we grouped our sample into three categories: (1) single, $N = 447$, (2) married parents, $N = 284$, and (3) married nonparents, $N = 262$. As in the case of military service, marital/parental status is a difficult variable to interpret in causal terms. Figure 3-3 shows that single persons were about twice as likely to be unemployed as married persons (11.6 percent versus 5.5 percent). This difference could conceivably be caused by the state of being married, in that young husbands may feel more pressure to find and keep a job than do young singles. Alternatively, perhaps young men who can find and hold jobs are financially more able to marry early.

The singles were worst off in terms of unemployment, but the parents held the lowest status jobs, averaging about one-third of a standard deviation below the other two groups (Figure 3-4). On the other hand, despite lower status jobs, the parents averaged about $0.16 per hour more than married nonparents, who in turn averaged about $0.16 per hour more than singles. These wage differences are not statistically or substantively significant.

FIGURE 3-3

Percentage Unemployed Related to Marital/Parental Status

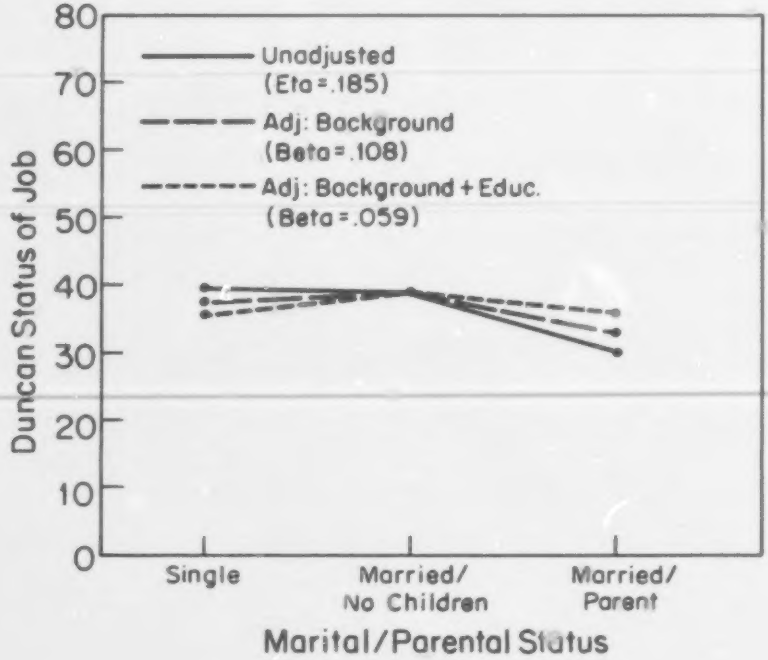


NOTE: The data underlying this figure can be found in Appendix E, Table E-3-3.

What happens to these relationships when we control socioeconomic level, number of siblings, and ability? The result with Duncan status is very similar to the results for military service: the eta of .185 is reduced to a beta of .108, and the addition of educational attainment culminates in a beta of only .059. As the adjusted lines in Figure 3-4 show, the lower status jobs of married parents can be attributed almost entirely to their differences in the control variables. These differences in variables do not explain unemployment, however. As Figure 3-3 indicates, the greater unemployment experienced by singles becomes even greater when the controls are applied (the beta of .134 is higher than the eta of .109).

FIGURE 3-4

Duncan Status of Job Related to Marital/Parental Status



NOTE: The data underlying this figure can be found in Appendix E, Table E-3-4.

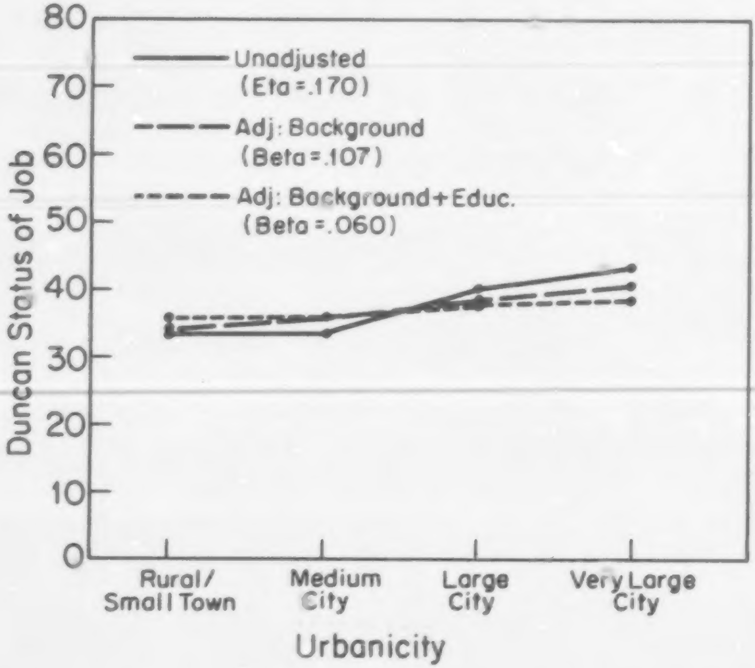
Along the pay dimension, there are no substantive differences before or after controlling.

The message here appears to be that marriage may decrease the likelihood of being unemployed, but the jobs that are obtained are not significantly different as a function of marital or parental status.

Urbanicity. Our measure of urbanicity used four categories: (1) rural, or small city or town of less than 50,000, (2) medium-sized city of 50,000 to 100,000, or suburb thereof, (3) fairly large city of 100,000 to 500,000, or suburb thereof, and (4) very large city of 500,000 or more, or suburb thereof.[1]

FIGURE 3-5

Duncan Status of Job Related to Urbanicity



NOTE: The data underlying this figure can be found in Appendix E, Table E-3-5.

The higher status jobs tended to be in the larger, more urban areas, as Figure 3-5 shows. Jobs in the very large cities averaged about 41 on the Duncan scale, compared to about 33 in the least urban areas, a difference of about one-third of a standard deviation (eta = .170). Consistant with the pattern found for military service and marital status, the relationship between Duncan status and urbanicity can be attributed largely to differences in the control variables. The eta is .170, but the betas are .107 and .060, controlling first background and ability, then educational attainment.

TABLE 3-6

Unemployment and Hourly Wage Rates Related to Urbanicity

Urbanicity	Percentage Unemployed		Hourly Wage Rate	
	unadj	adj*	unadj	adj*
1. Less than 50,000	6.0	6.1	3.85	3.86
2. 50,000–100,000	6.9	6.1	4.10	4.06
3. 100,000–500,000	13.6	13.4	4.08	4.08
4. 500,000 +	10.2	10.8	4.26	4.28
eta =	.108		.102	
beta =		.110		.100

*Adjusted for socioeconomic level, number of siblings, ability, and education.

Employment rates showed a rather different relationship with urbanicity, though again the differences were small. There was a 6 percent difference in the rate of unemployment between the highest (13.6 percent for those in fairly large cities) and the lowest (6.0 percent for those in the rural areas or small cities) categories (as Table 3-6 shows). Similar to status, hourly wages were highest in the most urban areas ($4.26), compared to the rural areas and small cities ($3.85). This difference is about 30 percent of a standard deviation. Eta values for employment and pay are .108 and .102, respectively. Employment and pay per hour are essentially unaffected by any controlling. Table 3-6 shows the means adjusted for background, ability, and education.

Region. The status of jobs varied slightly by geographical region, with the West low (mean Duncan status of 31), the Northeast high (42), and the North Central and the South in the middle (about 35). There was little variation in unemployment rates among the West, North Central, and Northeast regions; all three averaged more than 8 percent. But the South had a distinctly lower average of 4 percent. Pay per hour varied least by region, there being less than one-fifth of a standard deviation separating the extremes.

About two-thirds of the slight regional variations in status is explainable by differences in background, ability, and education. The South's lower unemployment rate is not affected by controls.

County-Level Conditions. We obtained measures of a number of conditions related to the labor market in most of the counties in which our respondents resided.[2] These measures include estimates provided by each state's unemployment security commission of: (1) how good the labor market is for unskilled males; (2) the prevailing wage rates for unskilled males; and (3) the unemployment rate.

Table 3-7 shows the data relating the first of these measures to Duncan status, unemployment, and wages. The mean Duncan status

TABLE 3-7

Occupational Attainments Related to County Labor Market

Labor Market	Duncan Status	Percentage Unemployed	Hourly Wage Rate
More jobs than applicants	32.2	7.3	3.60
Most people can find jobs	33.8	4.4	3.57
A number of unskilled workers cannot find jobs	39.4	8.3	4.30
Many unskilled workers cannot find jobs	34.2	11.8	4.11
Not ascertained	38.3	7.3	3.88
eta =	.125	.081	.182
beta* =	.054	.074	.174

*Adjusted for socioeconomic level, number of siblings, ability, and education.

scores are not really different among the groups except that status tended to be a little higher in areas where a number of unskilled workers are unable to find jobs. Given the lack of regularity in the data, it is likely that the little variation is attributable to other factors, particularly since the eta value of .125 is reduced to .054 after controlling background, ability, and education.

Unemployment rates varied somewhat by how good the market was estimated to be. Where there were more jobs than applicants, or where most people could find jobs, unemployment rates were under 8 percent; where some or many unskilled workers were unable to find jobs, rates were over 8 percent. The difference, which is not affected by controls, is slight, though certainly in the expected direction.

Pay per hour seems to be determined to some extent by the county labor market. Where there were more jobs than people, wages averaged well under $4.00 an hour; where there were more people than jobs, wages were over $4.00 an hour. In other words, wages appear to be high when jobs are scarce. One implication of this finding is that the jobs most likely to be eliminated in times of economic recession are the lower paying ones. Again, controls do not affect the relationships.

The second county-level measure of prevailing conditions is an estimate of wage levels for unskilled males. This measure shows virtually no relationship with Duncan status, unemployment, or hourly wages, either before or after controls are applied. In each case, the adjusted value of eta is zero. This total lack of association does not occur simply because of a lack of variation in the county measure—47 percent of respondents were in areas where the prevailing hourly rate was less than $2.49, for 39 percent the rate was between $2.50 and $2.99, and for 14 percent the rate was over $3.00.

TABLE 3-8

Occupational Attainments Related to County-Level Unemployment

County Unemployment Rate	Status	Percentage Unemployed	Hourly Wages
1. Less than 4 percent	38.1	4.9	3.73
2. 4 to 6 percent	34.7	9.2	4.18
3. Over 6 percent	36.4	10.1	4.14
Not Ascertained	38.2	8.3	3.77
eta =	.062	.074	.131
beta =	.040	.068	.132

The third county-level measure was the estimate of the unemployment rate. This measure showed the expected relationship with respondents' reports of their own unemployment. Where the county estimate was less than 4 percent, our respondents reported an average of less than 5 percent unemployment; where the county estimate was over 6 percent, our respondents reported an average of 10 percent. The Duncan status measure relates to county unemployment rather weakly and erratically. Hourly wages were also related to county unemployment rates; where unemployment was low, wages also tended to be low (Table 3-8). This is consistent with the earlier finding that where the market for unskilled males is bad, the scarity of jobs seems to be associated with higher pay for those jobs that do exist. None of the relationships is altered by controls.

Summary of Relationships with Environments and Experiences. In general, the environments and experiences explored in this section show less impact upon occupational attainments than we found for background, ability, and education. Nevertheless, some relationships emerged which are worth summarizing here.

1. Veterans showed more unemployment than nonveterans; but status and wages did not differ by military service, after controlling background, ability, and education.

2. Single respondents showed more unemployment than married respondents, but status and wages showed no effect of marriage, after controlling background, ability, and education.

3. Higher wages and higher status jobs were available in the more urbanized areas. Less unemployment was found in the more rural areas.

4. There was little regional variation in occupational attainments. A small exception was that the least unemployment occurred in the South.

5. Estimates of county-level conditions showed little relationship with our occupational data. An exception was that where jobs were scarce, wages were a bit higher for the jobs that did exist.

The Limited Predictability of Wages and Unemployment Rates

We have just seen that for the young men in our study, wages and unemployment rates are not nearly so predictable from a number of variables including educational level, family background, and ability as is the status of their jobs. The major reason for the absence of a relationship between education and wages is probably that the respondents in 1974 were quite young, 22 or 23 years old. Those with college experience were in many cases just beginning their occupational careers, while those with no college had been on the job for a number of years. Juster summarized a number of studies which provided " . . . the firmly documented finding that investments in formal schooling apparently yield a 'profit' both to the individual . . . and to society as a whole, after standardizing for the influence of innate ability and family background on earnings" (1975, p. 41). In other words, there appears to be an income advantage to additional education; the lack of support for that relationship in the present study is very likely a result of the restricted age range.

The same factor probably accounts for the lack of an association between wages and ability. In an analysis of several data sets, Hause had to conclude: "For early years in the earnings profile, the ability coefficient is very small, and in most cases not statistically significant" (1975, p. 148). In later years, Hause found that the effect of ability became more significant. Still, even in later years, there is considerable variation in income which is not accounted for by education and ability. This is hardly a new observation; the author of Ecclesiastes wrote " . . . the race is not to the swift, nor the battle to the strong, nor bread to the wise, nor riches to the intelligent . . . but time and chance happen to them all."

That unemployment rates are not more dependent on education, ability, background, environments, and experiences may be surprising. Of course we observed *some* relationships; high school dropouts and unmarried men were particularly likely to be unemployed. One reason for not finding stronger relationships with unemployment is that over 90 percent of the sample were employed; the very skewed distribution on the dependent variable limits the ability of other variables to predict to it. The inability to predict unemployment is not limited to our study; we again note that Kohen also found unemployment not very predictable in a similar sample: "The principal inadequacy of the model is that it cannot explain the unemployment dimension of labor market experience" (1973, p. 137).

TABLE 3-9

Multiple Regression Analysis Predicting Occupational Status from Personal Characteristics

Predictor	r	Beta	T-Ratio
Socioeconomic Level	.253	.068	2.04
Number of Siblings	−.196	−.053	1.72
Ability Composite	.349	.146	4.05
Average Grades: 9th Grade	.343	.167	4.98
Curriculum	.306	.106	3.15
College Plans	.275	.080	2.44
Need for Self-Development	.200	.071	2.36
Theft and Vandalism	−.086	−.049	1.69

Percentage of Variance Explained = 20.9 (adjusted = 20.2)

NOTE: Eductional attainment is added later in the analysis of its contribution.

Mutivariate Prediction of Job Status

For the rest of this chapter, we will focus on job status as indexed by the Duncan scale. The questions we will deal with, in more detail than earlier, are: What characteristics of individuals determine their later job status? Particularly, what is the role of educational attainment? In examining these questions, we will *not* be concerned with the various experiences and environments dealt with in the previous section. This is no great loss from an analytic standpoint since their contribution to prediction of job status is quite minimal.

In Chapter 2, we went through a rather laborious process in determining a set of variables, each of which seemed to make a significant contribution to educational attainment. The same basic process is utilized for job status, though the description of the intermediate steps will be eliminated. As with educational attainment, we use only variables measured in 1966. Table 3-9 presents the final equation linking the various personal characteristics with job status. The product-moment correlation of each predictor with job status is also included.

These variables overlap considerably with the set of variables that had significant effects on the level of attained education (Table 2-11). One interesting exception is need for self-development, a measure intended to tap motives or needs to improve oneself. As such, it might be considered a measure of ambition; therefore, it is not unreasonable that it should contribute, albeit in a very small way, to the quality of the job which an individual obtains.

The only other measure making an appearance in Table 3-9 which does not also appear in Table 2-11 is theft and vandalism. But the choice between this variable and delinquent behavior in school, which is in Table 2-11 and not in Table 3-9, is rather arbitrary. They are highly

TABLE 3-10

Multiple Regression Analyses Predicting Occupational Status from Personal Characteristics and Education

Predictor	r	Beta	Beta
Socioeconomic Level	.253	.069*	.009
Number of Siblings	−.196	−.055	−.042
Ability Composite	.349	.138*	.090*
Grade Failure	.162	−.013	−.036
Average Grades: 9th Grade	.343	.168*	.082*
Curriculum	.306	.104*	.069*
College Plans	.275	.077*	.033
Negative School Attitudes	−.213	−.035	−.006
Delinquent Behavior in School	−.148	−.011	.019
Need for Self-Development	.200	.070*	.055
Educational Attainment	.479	—	.330*
Percentage of Variance Explained = (Adjusted)		20.8 (20.0)	26.2 (25.4)

*t-ratio greater than 2.0

intercorrelated ($r = .66$), thus it makes little difference which one is included in a predictive equation.

Generally, it is evident that the variables which are important in determining later job status are background, ability, and education-related behaviors and aspiration. Several other variables which would seem to be more directly relevant to occupation—ambitions, job attitudes, and status of aspired occupation—are not significantly related to attained job status, in the presence of the variables in Table 3-9.

One point to notice is that status is considerably less dependent on the set of personal characteristics which we measured than is educational attainment. The explained variance in job status amounts to only 20 percent, compared to about 50 percent for education level.

Now, what happens when we try to assess the impact of educational attainment on job status? One problem is that not all of the predictors of educational attainment are included. Thus, we could incorrectly ascribe to educational attainment an effect which more properly belongs to some factor *antecedent* to attainment. Therefore, we will also include those variables which appear in Table 2-11, but not in Table 3-9. (And we will use delinquent behavior in school rather than theft and vandalism.) The equations, with and without educational attainment, are shown in Table 3-10.

Note first that the slightly different set of variables explains essentially the same amount of variance as the set in Table 3-9, 20 percent compared to 20.2 percent. The addition of educational attainment increases the amount to 25.4 percent. This is roughly half as large as the proportion of variance which can be explained in education.

Now how can we assess the effect of education vis-à-vis the other factors in Table 3-10? We know that educational attainment is closely linked to job status, but how should that link be interpreted? One can imagine two very different causal mechanisms that could account for the link. These two possible causal mechanisms might better be thought of as anchoring two ends of a continuum. On the one end, educational attainment is conceived to be *the* determinant of job status. Other factors such as ability and family background would be correlated with status, but they would have no direct effect; all their effect would be indirect, filtered through education. At this end of the continuum, educational attainment is the *sine qua non* of occupational attainment. Or, as Withey put it, "Education has increasingly become the bridge to better status" (1971, p. 131).

On the other end of the continuum, educational attainment is seen as an indicator variable, a proxy for more fundamental factors. These more fundamental factors might include family background, ability, motivations, values, attitudes, and early behaviors. Educational attainment, in this view, would not have any independent effect on status attainment; it would merely be reflecting the effect of these other variables, which we have been calling personal characteristics.

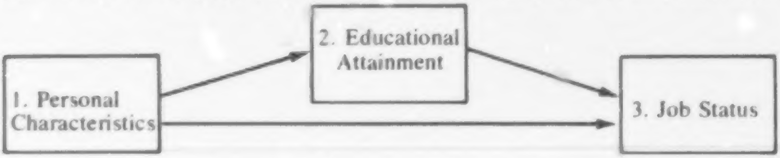
Given such a continuum of possible explanations, where does reality lie? To help answer that question, we will indulge in an enormous simplification. Let us treat the whole set of personal characteristics as one large composite variable. Now, since all of the personal characteristics have been measured earlier than educational and occupational attainment, it seems reasonable to treat them as causally prior. It is also reasonable to treat educational attainment as causally prior to job status. (There is surely a strong sociological tradition for doing so, although one can imagine instances in which the reverse causal direction also applies.) Given these causal assumptions, we can cast our questions in the form of a simple path model, as shown in Figure 3-6.

As an example, imagine a condition in which the composite measures of background and education have a correlation of .70 and education and status correlate .50. Under this condition, if background and status correlate .714, then the direct effect of education would be equal to zero. This would be an illustration of the education-as-proxy end of the continuum; all of the education-status correlation could be attributed solely to the association of education with background factors.

Under the same conditions of background-education correlating .70 and education-status correlating .50, but with background and status correlating only .35, then the direct effect of background would be equal to zero. This illustrates the education-as-bridge end of the continuum; all

FIGURE 3-6

Path Model Predicting Job Status from Personal Characteristics and Education



the background-status correlation would be the result of an indirect causal association, acting through education.

The reality, one suspects, would lie somewhere in between these two extremes.

The problem is to calculate the correlations between variables 1, 2, and 3 in our path diagram. Multiple correlations would be one method. The correlation between variables 1 and 2 would be the multiple correlation between all the personal characteristics and educational attainment. The correlation between variables 1 and 3 would be the multiple correlation between the personal characteristics and occupational attainment. The correlation between variables 2 and 3 would be just the zero order correlation between education and occupation. Unfortunately, this presents an inconsistency; the weights applied to the personal characteristics would not be the same for the two multiple correlations. In effect, we would be using two different composites, instead of a single one which the model implies. As a matter of fact, however, it turns out that the particular set of weights makes rather little difference in the conclusions which are drawn. (See Wainer, 1976, for proof that under very general circumstances coefficients in multiple regression models can be replaced with equal weights with almost no loss in accuracy.)

A better procedure would follow Coleman's (1976) solution to the problem. We first predict to job status using all the personal characteristics plus educational attainment. Then we create a composite of the person variables, using the weights determined by the predictive equation. When we do this, we obtain the values indicated in row (1) of Table 3-11. The values in row (2) are generated by using multiple correlations and two implicit composites (the procedure we described first but judged less desirable). While there are some differences between the two rows, the values are all close enough in the different methods that the same basic conclusions will follow. The discussion below will use the results from row (1).

Now let us consider what these path values mean. First we note that the direct causal impact of educational attainment on occupational status ($p_{32} = .315$) is stronger than the direct causal impact of personal charac-

TABLE 3-11

Results of Regressions Predicting Job Status from Personal Characteristics and Education

	r_{12}	r_{13}	r_{23}	p_{21}	p_{31}	p_{32}
1.	.644	.442	.469	.644	.239	.315
2.	.713	453	.469	.713	.241	.297

NOTE: See text for explanation of the two rows.

teristics on status (p_{31} = .239). Should we then conclude from that that educational attainment is more important than personal characteristics in producing occupational status? That is not an answerable question, in that form. But suppose we were to clarify the question as follows: Which would make a greater difference in occupational status, giving a person an increase of one standard deviation in "personal characteristics" or giving him a one standard deviation increase in educational attainment? The answer is that the one standard deviation increase in personal characteristics would have a substantially greater positive impact on occupational status because the personal characteristics appear earlier in the causal chain.

Let us show why this is true, using the data from our model. First, consider what would happen to a particular individual (with a given set of personal characteristics) who could somehow be given a one standard deviation increase in educational attainment. He would realize (on the average) a .315 standard deviation (SD) increase in occupational status—or, more precisely, his occupational status could be expected to be .315 standard deviation units higher than would otherwise have been the case. (This is because path p_{32} has a value of .315.)

Now consider what would happen if an individual could be given a one standard deviation increase in personal characteristics. This would have a direct effect of increasing occupational status by .239 SD (because path p_{31} is .239). The direct effect in this case refers to the impact of personal characteristics *if education were unchanged or held constant*. But education would not be expected to remain unchanged. The path p_{21} indicates that a one standard deviation increase in personal characteristics would also, on the average, cause a .644 SD increase in educational attainment. In other words, we would have effected two things, involving two different causal paths. First, a bright individual from a high SEL family would be likely to get a higher status job, even if he had no more education than another less advantaged individual. Second, in the real world as presently constituted, if an individual could be made one standard deviation higher in personal characteristics, he would also be made .644 SD better educated, on the average. The second path of causation is what the path analysts call an indirect causal effect. If the one standard deviation increase in personal characteristics is worth a .644 increase in educational attainment (path p_{21}), and if a one SD increase in educational attainment is worth a .315 increase in occupational status (path p_{32}), then a .644 increase in educational attainment is worth a .203 increase in occupational status (.644 × .315 = .203).

When we put together the direct causal effect of personal characteristics (i.e., path p_{31}, the part that does not take place "through" educational attainment), plus the part that does take place indirectly through educational attainment (paths $p_{32} \times p_{21}$), we add effects of .239 SD and .203 SD, and we say that a one SD increase in personal characteristics is worth a total of .442 SD of occupational status. This is much larger than the .315 SD increase in occupational status yielded by a one SD increase in educational attainment. The difference occurs because educational attainment comes later in the causal chain, so if it were changed, we would not assume any change in the prior personal characteristics. On the other hand, if personal characteristics were changed, we would assume that everything subsequent to that in the causal chain had some probability of being changed. The outcome of this rather extended look at causal modelling is of real practical importance. To put it quite simply, if you want to make a difference in occupational status, it is better to exercise influence early. Whatever can be done to raise academic aptitude, interest, and performance *prior to high school* can be expected to have a sort of "double impact" on later occupational status.

Notes

[1] Respondents were asked to describe in which of eight categories of urbanicity they lived. There were some small differences which are not completely captured by the four categories, but the smaller number of categories accounts for most of the variance. Given the rather weak relationships, there are no important distinctions being ignored. In one case, employment, the four-category version actually explains more variance (adjusted) than the eight-category one.

[2] These data, which are based on 1973 conditions, were generously supplied by James N. Morgan, who collected the data for a study funded by the Office of Economic Opportunity (Morgan et al., 1974). The counties originally used in the 1966 Youth in Transition sample overlap completely with the counties in Morgan's study. However, by 1974 many respondents had moved to different counties, so there is a considerable amount of missing data for these county-level variables.

Chapter 4

JOB SATISFACTION

A full understanding of occupational success involves not only the objective measures of attainment examined in the preceding chapter, but also the individual's subjective sense of job satisfaction. In this chapter we first examine our respondents' reports of satisfaction with their jobs. Next we examine the correlates of job satisfaction in an attempt to explain the different levels of satisfaction expressed by the respondents. Among the correlates of job satisfaction, we focus special attention on the role of education to see whether respondents with more education have more satisfying jobs. We also examine a number of specific job characteristics to identify those aspects of the work itself which seem most important for satisfaction. (Again, as in Chapter 3, the analysis is based on those respondents who were in the civilian work force and had not been in college within the previous few months.)

Levels of Satisfaction

The concept of job satisfaction was operationalized quite simply in this study. A single item asked the respondent to consider his job overall and indicate his satisfaction on a five-point scale (see Table 4-1). (At Time 4 both a single-item measure and a more complex multi-item index of satisfaction were used. As Johnston and Bachman 1973 reported, the single item did almost as well as the more complex version. For this reason, only the single item was included in the Time 5 data collection.)

The Time 4 distribution of satisfaction is skewed with 69 percent of the respondents falling in the "very" and "quite" satisfied categories. For convenience in subsequent comparisons we combine these top two categories of satisfaction and say that 69 percent of the respondents were "satisfied" with their jobs. The Time 5 distribution is also skewed,

TABLE 4-1

Job Satisfaction at Time 4 and Time 5 among Full-Time Workers

"All things considered, how satisfied are you with your work experience on your present (or most recent) job?"	Time 4		Time 5		Working Full Time at Both Time 4 and Time 5			
	N	%	N	%	N	%	N	%
5. Very satisfied	150	36	237	24	128	35	95	26
4. Quite satisfied	139	33	367	37	118	33	131	36
3. Somewhat satisfied	70	17	251	25	61	17	86	24
2. Not very satisfied	42	10	88	9	38	10	35	10
1. Not at all satisfied	18	4	44	5	17	5	13	4
Total	419	100	991	100	362	100	360	100
Mean	3.86		3.68		3.83		3.72	
S.D.	1.14		1.07		1.16		1.07	

NOTE: The questions asked at Time 4 and Time 5 differed in two ways. At Time 4 the question asked only about "present job" while at Time 5 the stem was modified to say "present (or most recent) job" to make it applicable to those who were primarily in the labor force, but were unemployed at the time of the interview. A second difference concerned the administration: the Time 4 question was part of a personal interview while the Time 5 question was part of a self-administered questionnaire.

but it reflects a slight downward shift; the percentage satisfied declined from 69 percent to 61 percent. It occurred to us that this decline might be an artifact because 500 additional panel members who had entered the labor force between Time 4 and Time 5 were not included in the satisfaction data. But, as the right-hand columns of Table 4-1 show, the decline in percentage satisfied is virtually the same when we analyze only the subgroup who were working full time at both Time 4 and Time 5.

How are these data to be judged? Should they be described as indicating high or low satisfaction? To answer that question it will be helpful to consider data from a broader spectrum of the labor force. The results of seven national surveys conducted between 1958 and 1973 have recently been summarized by Quinn et al. (1974). Each of the surveys contained single-item measures of satisfaction quite similar to the Youth in Transition item. To report these findings, Quinn and his colleagues also combined the two categories describing the highest satisfaction and used this figure to represent the percentage of "satisfied" workers. Looking at the data for males between the ages of 21 and 65, they concluded that job satisfaction was constant for this group between 1964 and 1973, and the percentage of satisfied workers was between 88 percent and 92 percent. Breakdowns by age, however, showed that younger workers (16–21 or 21–29) were invariably less satisfied than their elders, with the percentage satisfied varying unsystematically between 75 percent and 88 percent. This led the authors to conclude that "younger workers have been consistently less satisfied than their elders for the last 15 years and, probably, even earlier than that" (p. 12).

On the basis of these findings, the Youth in Transition respondents must be judged as indicating *relatively* low job satisfaction; indeed, their satisfaction may be even lower than the average for young workers suggested by earlier national studies. Further, if we could be convinced that method differences (personal interview at Time 4 versus self-administered questionnaire at Time 5) were not operating here, we would suggest that satisfaction declines slightly during the first few years of work experience.

Education, Status, and Job Satisfaction

Chapter 3 noted that educational attainment is strongly associated with the status of attained occupation ($r = .48$). Education would also seem to be an important determinant of job satisfaction. But if we looked only at the zero-order product-moment correlation between education and job satisfaction, we would conclude that education has no effect—because $r = .001$. The lack of correlation between education and job satisfaction is surprising, particularly since we know that education is strongly linked to job status, and it seems likely that job status would have an impact on job satisfaction.

There is indeed a correlation between job status and job satisfaction—$r = .21$. Given that relationship, and those noted above, a multivariate approach is clearly necessary to understand the relationship between education and job satisfaction. In particular, we must examine educational attainment and job status jointly as predictors of job satisfaction.

It was simple and straightforward to treat this multivariate analysis as an extension of the analysis presented in Chapter 3 (Table 3-10). Accordingly, we carried out the series of multiple regressions shown in Table 4-2. The first regression analysis predicts job satisfaction using the same set of personal characteristics as were used in Chapter 3. The next two analyses add to those personal characteristics either educational attainment or occupational status. The final regression analysis, which will be the focus of our discussion here, uses as predictors all the personal characteristics plus both educational attainment and occupational status. For purposes of comparison, the first column in Table 4-2 presents the zero-order product-moment correlation between each predictor and job satisfaction.

A quick overview of Table 4-2 indicates that most of the personal characteristics are not related to job satisfaction either at the zero-order level or at the multivariate level (adjusted $R^2 = .006$). One exception needs only a brief mention: a history of delinquent behavior in school

TABLE 4-2

Multiple Regression Analyses Predicting Job Satisfaction from Personal Characteristics, Education, and Occupational Status

	Relationship with Job Satisfaction†				
Predictor	r	Beta	Beta	Beta	Beta
Socioeconomic Level	.009	.038	.042	.020	.038
Number of Siblings	−.029	−.042	−.043	−.028	−.031
Ability Composite	−.057	−.105*	−.103*	−.141*	−.129*
Grade Failure	−.022	−.030	−.029	−.026	−.019
Average Grades: 9th Grade	.034	.058	.061	.014	.038
Curriculum	−.010	−.002	−.001	−.029	−.020
College Plans	−.025	−.040	−.039	−.060	−.048
Negative School Attitudes	−.027	−.020	−.021	−.011	−.020
Delinquent Behavior in School	−.069	−.066	−.067	−.063	−.072*
Need for Self-Development	.006	.003	.004	−.015	−.012
Educational Attainment	.001	—	−.011	—	−.105*
Occupational Status	.207	—	—	.262*	.284*
Percentage of Variance Explained = (Adjusted)		1.6 (0.6)	1.6 (0.5)	7.1 (6.0)	7.6 (6.5)

*t-ratio greater than 2.0

†Based on those in the civilian work force, not recently in college, and not missing data on occupational status ($N \leq 988$).

shows a slight negative association with job satisfaction, and that association is essentially unchanged when other factors are controlled (i.e., the beta values are nearly identical to the zero-order correlation). More important is the fact that family background dimensions such as socioeconomic level, as well as a number of other educationally relevant variables, show no relationship with later job satisfaction. The one educationally relevant variable which does show a relationship to job satisfaction in the regression analyses is our composite measure of academic ability, a relationship which we will discuss below.

The beta values in the fifth column of Table 4-2 show that when educational attainment and occupational status are used together as predictors of job satisfaction, the positive impact of occupational status is higher than the zero-order correlation (beta = .28 compared with *r* = .21), while the contribution of educational attainment becomes negative (beta = −.11). It is no surprise to find that for any given level of educational attainment, the higher the status of a job, the higher will be the satisfaction with that job. But the other relationship is a bit less obvious, and therefore more interesting: for any given level of job status, the more education an individual has had, the lower his job satisfaction is likely to be. A similar pattern appears for our measure of academic ability: within any level of job status, the more able individuals tend to report the lower levels of job satisfaction. None of these effects is especially large (adjusted $R^2 = .065$); nevertheless, the patterns of relationship are noteworthy.

We can summarize and interpret these relationships as indicating that there is a certain risk in having high ability and education. On the positive side, ability and education increase the opportunities for higher status jobs, and such jobs tend to be more satisfying. But the negative aspect is that ability and education also carry with them a sort of burden or risk—the able and educated individual whose job status falls short of expectations is likely to feel greater dissatisfaction than a less able or educated individual in a comparable job. In the case of education, these positive and negative effects neatly counterbalance each other, and that is why the bivariate correlation between education and job satisfaction is just about zero. (In the case of ability, the negative effect is a bit stronger, thus the bivariate correlation between ability and job satisfaction is −.06.)

Figure 4-1 presents another perspective on the ways that job satisfaction is influenced by education and job status. It shows the relationship of educational attainment to satisfaction separately for each of three levels of attained job status. The overall relationship of education to status is fairly flat. However, in the most severe "mismatch" category—those with a bachelor degree holding low status jobs—the trend toward low satisfaction is quite pronounced. Apparently, those with higher education have higher aspirations, and failure to attain these aspirations leads to low levels of satisfaction.

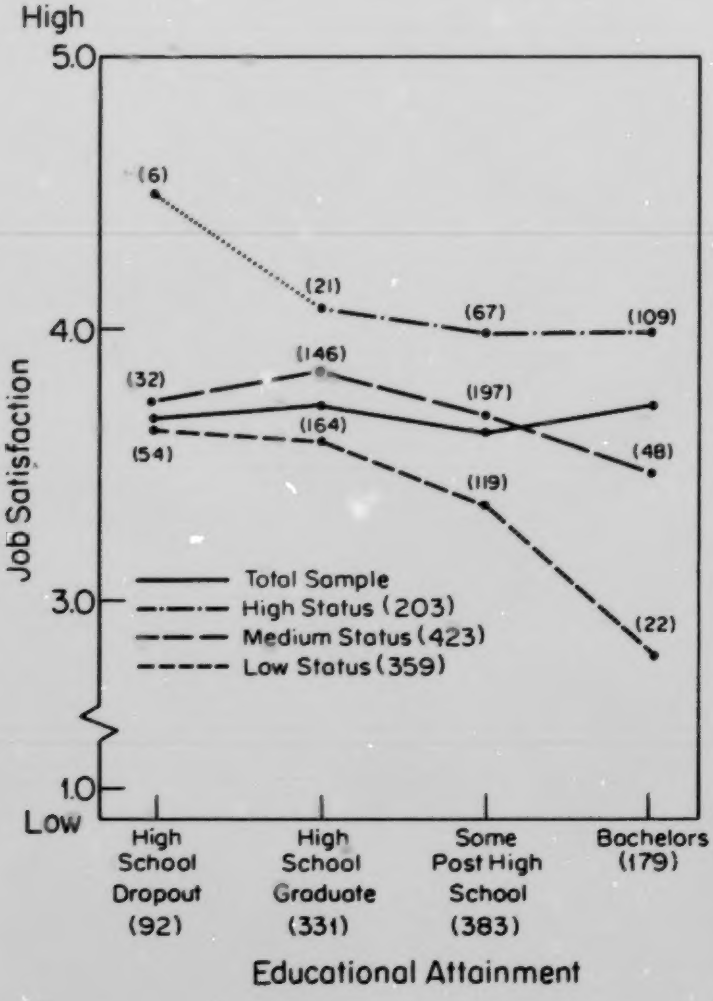
Since the "mismatch" subgroup is small, this pattern might be dismissed as interesting but unimportant. Recent demographic trends, however, suggest that this subgroup is likely to be larger in the future. In a recent article, George Brown (1976) projected that by 1990 there will be large increases in the number of people with post-high school training. "The adult population with some college training was 15 percent in 1960. Today it is 25 percent. And fifteen years from now over one-third of the adult population will have had a year or more of college-level work" (p. 31). If this projection is accurate, and if there is not a commensurate growth in the availability of higher status jobs, we can project that average levels of satisfaction will decline.

These findings are corroborated in a special report by Quinn and Mandelovitch (1975) entitled, "Education and Job Satisfaction: A Questionable Payoff." After reviewing nine national studies of the American work force, the authors concluded:

> All of the observed relationships [between education and satisfaction] were modest at best, the correlations never exceeding .12. There was clearly no increment in job satisfaction with each succeeding year of education (p. vi).

FIGURE 4-1

Education and Job Status Related to Job Satisfaction



NOTE: Duncan status scores: Low = 1–19, Medium = 20–59, High = 60–96. Numbers in parentheses indicate numbers of cases.
The data underlying this figure can be found in Appendix E, Table E-4-1.

However, when Quinn and Mandelovitch examined several measures of the match between a worker's educational level and the educational requirements of his work, a different picture emerged. Various measures of "over/under educated" for the job were associated with satisfaction at the eta levels of .14 to .21. The authors noted further:

> . . . It was not deviation [of a worker's education from the educational requirements of the job] *per se* that was associated with dissatisfaction but only deviation in a particular direction—where a worker was too highly educated for his or her work. The under-educated workers were particularly well satisfied, perhaps because of their evident successes in having attained occupations better than they might have anticipated on the basis of their educational attainments alone.
>
> It may therefore be concluded that the relatively small payoffs in job satisfaction that accompany increasing education can be more than offset when job demands fail to keep pace with educational attainment (pp. 26–27).

Characteristics of Satisfying Jobs

The multivariate analysis has shown a moderately strong positive impact of job status on job satisfaction, plus smaller negative impacts for ability and education. But these factors together explain little of the variance in job satisfaction. Thus, it is of interest to search for other determinants of job satisfaction. One obvious place to look is among the characteristics of the jobs themselves.

Job Category. It is quite apparent that there are differences between the job of store manager and assembly-line worker in terms of the nature of the task, the nature of the work environment, and extent of supervision. If job satisfaction varies with some of these qualities of work, then differential satisfaction may be expressed by those who hold these different jobs. Table 4-3 shows that this is indeed the case. Mean satisfaction scores are presented for each occupational group, using a nine-category Census Bureau classification scheme. An eta of .29 confirms that there are indeed significant differences in satisfaction across these different job type categories. The pattern is not surprising; those most satisfied were in managerial and professional jobs, while those least satisfied held laborer and service jobs. These data are suggestive, but they do not identify directly the characteristics which make professional and managerial jobs so highly satisfying or the characteristics of laborer jobs which make them so much less satisfying.

Aspects of the Job. What aspects of a job show an impact on satisfaction? In order to be able to deal with the question, we presented our respondents with a list of job descriptions and asked, "How true is each of the following statements for the job you have now?" The descriptions are identical to the list used in Chapter 8 to assess attitudes toward an

TABLE 4-3

Average Job Satisfaction for Nine Categories of Jobs

Census Category	N	Average Satisfaction Score*
1. Managerial	94	4.20
2. Farmer/Farm Laborer	22	3.95
3. Professional/Technical	139	3.92
4. Craftsman	206	3.84
5. Sales	37	3.62
6. Clerical	70	3.57
7. Operative	220	3.45
8. Laborer	82	3.22
9. Service Worker	37	3.22
Total	907	
Mean		3.69
S.D.		1.07
eta		.287

*5 = very satisfied, 1 = not at all satisfied

ideal job. The items, shown in Table 4-4, covered a wide range, including both extrinsic rewards (F15: the pay is good) and intrinsic rewards (F9: I can learn new things, learn new skills).

Included in Table 4-4 are the response distributions which indicate how respondents described their current jobs. The item which received the highest proportion of "very true" or "pretty true" ratings (85 percent) mentioned having nice, friendly people to work with. Apparently very few respondents were dissatisfied with their co-workers. Most respondents also perceived their jobs as steady (75 percent true or pretty true). Moreover, a majority of respondents rated their jobs as having good pay, and as giving them a chance to learn new things, get ahead, and use their skills and abilities. As we see in Table 8-2, these same six dimensions are given highest rating as important in an ideal job; about 90 percent or more rate each of them as "pretty important" or "very important."

Before asking how these job characteristics relate to satisfaction, it might be asked whether or not they actually describe the respondents' jobs? This same question arose in the national Survey of Working Condition conducted in 1969 and 1973 at The University of Michigan. These studies used a more extensive list of job characteristics, and a separate study was carried out to validate worker ratings. Observers were sent to the job sites of workers in the study to collect independent data on job characteristics. This validation study led to the conclusion that workers' reports were largely accurate and did not represent distorted perceptions of job conditions (Cammann et al., 1976).

TABLE 4-4

Job Description Items

F2. How often do you get a chance to work with a supervisor in planning what your work will be—like what you will be doing, or how you should do it?

	Percentage Responding
5. Almost always	26
4. Often	28
3. Sometimes	20
2. Seldom	16
1. Never	11
	101*

In an earlier section, we asked you some questions about the kind of job you'd like to have. Here are some questions about your present job—how true is each of the following statements for the job you have now? (Or for your most recent job, if you don't have a job now.)

		Percentage Responding			
Ques. No.	Job Characteristic	Very true 4	Pretty true 3	A little true 2	Not at all true 1
F7.	There's no one to boss me on the work	10	26	28	36
F8.	It is steady, no chance of being laid off	39	36	14	11
F9.	I can learn new things, learn new skills	36	30	25	9
F10.	I don't have to work too hard	9	29	36	27
F11.	It is a clean job, where I don't get dirty	16	20	22	42
F12.	It has good chances for getting ahead	28	31	28	12
F13.	I don't have to take a lot of responsibility	6	15	32	47
F14.	It leaves me a lot of free time to do what I want to do	9	26	41	24
F15.	The pay is good	21	44	23	11
F16.	It is a job that my friends think a lot of—has class	8	26	40	26
F17.	It uses my skills and abilities —lets me do the things I can do best	24	35	23	19
F18.	There are nice friendly people to work with	39	46	13	2
F19.	It doesn't make me learn a lot of new things	9	13	28	50

*Because of rounding, percentages do not always total 100.

TABLE 4-5

Ratings of Job Characteristics Correlated with Job Satisfaction, Job Status, and Educational Attainment

Ques. No.	Job Characteristic*	Product-Moment Correlation† with: Job Satisfaction	Job Status	Educational Attainment
F17.	Uses my skills and abilities	.60	.31	.08
F12.	Good chances for getting ahead	.51	.32	.10
F9.	I can learn new things	.49	.27	.12
F19.	It doesn't make me learn new things	−.43	−.30	−.13
F2.	I can influence the job	.37	.21	.07
F16.	Has class—my friends think a lot of it	.35	.41	.24
F18.	Nice, friendly co-workers	.34	.11	.04
F15.	The pay is good	.34	.04	−.09
F13.	Don't have to take a lot of responsibility	−.28	−.28	−.15
F8.	Job is steady	.19	.11	.02
F7.	No one to boss me on the job	.19	.14	.07
F11.	Clean job	.10	.52	.35
F14.	Leaves me a lot of free time	.03	.04	.02
F10.	Don't have to work too hard	−.03	−.01	−.07

*"How true is this of your job?" (4) "very true" to (1) "not at all true."

†Based on those in the civilian work force, not recently in college, and not missing data on job status (Ns range from 841 to 853).

How Aspects of the Job Relate to Satisfaction. To see which characteristics of jobs are most relevant to satisfaction, the items shown in Table 4-4 were correlated with the measure of Time 5 job satisfaction. The results are shown in the first column of Table 4-5. The aspect that correlates most highly with job satisfaction is the opportunity the job offers to utilize one's skills (r = .60); this aspect by itself can account for 36 percent of the variance in overall satisfaction. Two other items involving job challenge correlate quite highly: opportunity for advancement (r = .51) and the chance to learn new things (r = .49).

Correlations in the mid .30's are associated with the opportunity to influence what the work is going to be or how it is to be carried out (r = .37), friendly co-workers (.34), good pay (.34), and the individual's perception of job status—the job has "class" (.35). Whether or not the employment is steady is quite low in association (.19). Of little importance to satisfaction are the job comfort dimensions—clean job, easy work, free time.

Measurement issues prevent us from making precise comparisons of the relative importance of each job characteristic. It is interesting to note, however, that pay is not especially high on the list. Intrinsic reward characteristics appear more relevant to an individual's sense of satisfaction with his work than does monetary reward or job security. This is not to argue that money or security are unimportant, only that for young men they are not the keys to a satisfying job.

The relationships noted above suggest some reasons for the observation made earlier that young workers are less satisfied with their jobs than older workers. Entry-level jobs in the labor force are not characterized by utilizing worker skills or allowing the worker to exercise influence over the type of task or the way the work is carried out. Additionally, in a system which rewards seniority, the more satisfying jobs are reserved for the older workers. Indeed, we noted a possible decline in job satisfaction between ages 19 and 23. This could be explained by the seniority notion, if one reasoned that the pace of advancement into the jobs with more satisfying employment conditions was much slower than expected. Nineteen-year-olds could be satisfied with relatively poor employment conditions on the expectation that job advancement would lead to improved conditions in a few years. But when several years passed and the "better" jobs were still in the future, the resulting disappointment may have contributed to lower job satisfaction.

How Aspects of the Job Relate to Status and Education. The second column in Table 4-5 indicates how particular job aspects are correlated with the overall Duncan status ratings of the jobs. The higher status jobs are also above average in rated opportunities to use skills and abilities, learn new things, and get ahead—the same factors which show the strongest relationship with job satisfaction. Not surprisingly, high status jobs are also rated as "having class" and being clean. Interestingly enough, and quite consistent with our findings in Chapter 3, there is no correlation between job status and a rating that "the pay is good" (r = .04).

Turning to the relationship between educational attainment and job characteristics, shown in column three of Table 4-5, we can gain some further understanding about the lack of a direct positive relationship between education and job satisfaction. Those with higher levels of education tended to describe their jobs as clean (r = .35) and as having class (r = .24); but no other aspect of the job shows nearly as strong a correlation with education. In particular, educational attainment shows very little relationship with job opportunities for learning new things (r = .12) or using skills and abilities (r = .08). As we suggested earlier, the better educated may have more of such opportunities, on the average; however, their standards and expectations are also higher, and the two effects just about cancel each other.

Does Education Increase Job Satisfaction?

The answer to the above question, based on our sample of young men five years beyond high school, is a qualified no. One important qualification occurs simply because the data involve individuals only five years after high school, and those still pursuing their education were not included in the analyses. Thus it is quite possible that those with the highest levels of educational attainment will, perhaps 10 years after high school, show substantially above-average levels of job satisfaction. By that time, or perhaps still later, others with somewhat above-average levels of education may also show more than average job satisfaction. But for young men in their early twenties it seems fairly clear that the benefits of education do not include the assurance of above-average job satisfaction.

Why does education not lead more clearly and directly to job satisfaction? Our analyses in this chapter have provided a number of bits of evidence which suggest a fairly plausible explanation. It appears that education is something of a two-edged sword, so we have distinguished two kinds of effects upon job satisfaction. On the one hand, education increases the likelihood of finding a high status job, and such jobs have better than average opportunities to use skills and abilities—a characteristic that is rated as very important and is strongly correlated with job satisfaction. Thus education has an indirect positive effect on job satisfaction, because education is linked with status which in turn is linked with satisfaction. But, on the other hand, education also shows a negative impact on satisfaction when status is controlled; within any given level of job status, the more educated individuals are somewhat less satisfied—presumably because their education has raised their levels of aspiration. For young men in their early twenties, these two effects seem just about equal; therefore, *on the average*, they cancel each other.

The practical implications of this finding are not particularly simple or straightforward. Many of those in the high school class of 1969 were told unequivocally that higher education would lead to better and more satisfying jobs. This turned out to be true for only some of them. For others, the promised effects of education had not—at least not yet—been realized. It seems increasingly clear that the message to future high school classes should be a more balanced one: the best (highest status) jobs are likely to go to those with college degrees, but the total number of such jobs seems limited, and this means that some college graduates are likely to be disappointed with the jobs they actually find. In short, higher education still carries a promise, but it also carries a risk. And, at least in the short run, the two effects seem more nearly equal than we might have imagined.

Chapter 5

SELF-ESTEEM AND ATTAINMENT: AN ANALYSIS OF CHANGE AND STABILITY[1]

Most people believe that social environments and experiences can have lasting impacts on personality characteristics; indeed, the most basic purpose of the Youth in Transition project has been to measure and analyze some of these impacts. But it is also commonly assumed that variations in personality characteristics lead different people to be exposed to different environments and experiences. The preceding chapters have demonstrated that differences in background, ability, and prior experiences greatly influence both educational and occupational attainment. Thus the causal linkage between environments and personality must be viewed as a two-way street: environments and events shape people, but people also play an important part in selecting and shaping their own experiences.

In the next several chapters we examine a wide range of personality and behavior dimensions which have been measured at several points in time, in many cases over the full eight-year longitudinal span of the Youth in Transition project. Unlike the previous chapters in which such characteristics were viewed as *predictors* of educational and occupational attainment, we now study these dimensions of values, attitudes, self-concepts, and behaviors as *outcomes*—as dependent variables or criterion dimensions. As we look at each outcome dimension, we ask whether some experiences during the late teens and early twenties seem to have different impacts than others.

We begin with a detailed exploration of self-esteem and its relationships with educational and occupational attainment for three reasons: First, there has been considerable interest in this dimension of personality. Second, our own findings in this area are unique and provocative. Finally, self-esteem seems particularly well-suited for illustrating the complexities of longitudinal analysis—the difficulties we encounter as we attempt to understand the two-way street of causation linking different people to different experiences.

Self-Esteem: Theoretical Perspectives and Past Research

Self-esteem, long the subject of theoretical speculation, has recently been the topic of several major empirical studies (Coopersmith, 1967; Rosenberg, 1965; Rosenberg and Simmons, 1971). Gergen (1971) and others who have reviewed the literature in this area have noted that the term self-esteem has been used in various ways by different authors. Our own approach has been heavily influenced by the work of Rosenberg as well as Coopersmith. Like these authors, 1. we use the term self-esteem to refer to an individual's self-evaluation or judgment of his own worth; 2. we treat it as a global dimension rather than as a number of more specific ones, and 3. we view it as a relatively enduring characteristic rather than something which shifts abruptly from one situation to another.

An additional perspective on self-esteem has been provided by French and Kahn, who argued that "The various dimensions used by the person for perceiving himself and others are not all equally important to the person. They may vary in *centrality,* defined as the degree to which they determine the person's self-esteem" (1962, p. 19). This notion that different aspects of the person may be differentially central to self-esteem is also found in the work of Douvan and Gold (1967), who noted that one of the more important components of self for most adolescent boys (in contrast to girls) is a sense of competence and achievement expressed in competitive fields such as athletics, work, and intellectual activity. This concept of centrality is not incompatible with a treatment of self-esteem as a single global dimension; it simply suggests that there can be variations and changes in the relative weights, i.e., the centrality, of the several components which jointly constitute global self-esteem.

In this chapter we focus largely upon the links between self-esteem and success—specifically, educational and occupational attainments of young men in their early twenties. A number of authors have presented or summarized evidence that self-esteem is linked to educational and occupational attainment (Coopersmith, 1967; Gergen, 1971; Rosenberg, 1965; Rosenberg and Simmons, 1971), and *Youth in Transition,* Vol. II, provides further support (Appendix D). Particularly relevant is Purkey's summary of the research relating self-esteem to school achievement. He concluded that " . . . there is no question that there is a persistent relationship between the self and academic achievement . . . " Although the data did not provide clear-cut evidence about causal direction, he *interpreted* the findings as showing " . . . that there is a continuous interaction between the self and academic achievement, and that each directly influences the other" (1970, p. 23). In the area of occupational success, Luck and Heiss (1972) reported that self-esteem was positively linked to a number of job dimensions, including income, prestige, upward mobility, and personal satisfaction with occupational achievement. Kaufman (1973) reported that loss of a job resulted in diminished self-esteem among a group of professional engineers and scientists.

In sum, there is reason to believe that self-esteem is linked to educational and occupational attainment, and that this linkage probably involves a number of different and complexly interrelated patterns of causation. While it is a simple matter to point out the complexities, the problem of disentangling such reciprocal causation is extremely difficult and vexing. In most cases, the empirical evidence is limited to a static relationship at a single point in time, e.g., survey respondents with higher levels of educational attainment also have higher mean scores on a measure of self-esteem (Weidman, Phelan, and Sullivan, 1972). While such findings are important in demonstrating that a relationship does exist, they leave us largely in the dark about causal dynamics.

This study is not limited to a single point in time. Our measures of self-esteem span the high school years as well as the five years after high school—a period in which most of our respondents completed formal education and entered the labor market. Our measures of educational and occupational attainment are based on data collected at the end of the study. These data on self-esteem and attainment, plus measures of background, ability, and other characteristics, permit us to go several steps beyond the usual cross-sectional analyses and interpretations.

Patterns of Causation

We can distinguish three logically distinct patterns of causation, all of which may play some part in the relationship between self-esteem (A) and attainment (B):

A Causes B. Self-esteem may contribute directly to attainment. Positive self-concepts are likely to make individuals more ambitious, i.e., they will set relatively high levels of aspiration. Moreover, their positive views of their own abilities and competence will help them to withstand the occasional setbacks and reversals along the road to educational and occupational attainment.

B Causes A. Attainment may contribute, both directly and indirectly, to heightened self-esteem. Educational and occupational attainments represent important sources of direct feedback about the self, and this may be particularly true for adolescents and young adults. There are indirect effects as well; individuals with the most education and the highest status jobs are most likely to be exposed to "ego-boosting" experiences in their day-to day activities.

C Causes both A and B. Some of the underlying determinants of self-esteem are also important determinants of attainment. Family socioeconomic level, academic ability, and past educational accomplishments all seem likely to contribute to a young person's self-esteem. But the factors of background and ability also directly influence educational and occupational attainment. Thus, an additional reason for expecting self-esteem to be correlated with the attainment is not that one causes the other, but rather that self-esteem and attainment have some common antecedents (the C variables).

Shifting Centrality. The three logical patterns of causation have been stated in somewhat "fixed" or permanent form. For example, if we say that educational success contributes to increased self-esteem, this implies that such will be the case whether the individual is beginning high school, ending high school, or somewhere in college. But this makes no allowance for the possibility of shifts along the dimension of centrality—the possibility that some aspects of the self which are important determinants of self-esteem at one stage in life may become less important at a later stage. If we were to find a more-or-less gradual shift in the strength of relationship between self-esteem and any factor of background, ability, or attainment, that might be evidence of an increase or decrease in that factor's centrality for self-esteem. For example, we might expect that things having to do with occupational attainment would become increasingly important to young men in general as they leave school and enter the job market. On the other hand, things having to do with educational success might become less important, at least among those who do not continue their education beyond high school.

The several perspectives on causal relationships and centrality reviewed here are not presented as testable hypotheses. Rather, they are conceptual guidelines to which we will refer from time to time as we examine and interpret relationships among variables.

The Measure of Self-Esteem

Our 10-item measure of self-esteem is similar to that used by Rosenberg (1965). The first six items in Table 5-1 were adapted directly from his scale; the other four items, similar in content, were developed by

Table 5-1

Self-Esteem Items and Item-Index Correlations

	1966			1974		
	M	SD	r‡	M	SD	r‡
I feel that I am a person of worth, at least on an equal plane with others.*	3.89	.91	.57	4.52	.68	.62
I feel that I have a number of good qualities.*	3.72	.82	.56	4.36	.69	.66
I am able to do things as well as most other people.*	3.73	.79	.57	4.31	.71	.61
I feel I do not have much to be proud of.†	3.87	1.15	.54	4.03	1.01	.55
I take a positive attitude toward myself.*	3.64	.89	.59	4.12	.85	.69
Sometimes I think I am no good at all.†	3.47	1.06	.58	4.06	.85	.67
I am a useful guy to have around.*	3.70	.77	.48	3.99	.75	.63
I feel that I can't do anything right.†	3.83	1.02	.56	4.11	.82	.60
When I do a job, I do it well.*	3.67	.81	.51	4.35	.63	.51
I feel that my life is not very useful.†	3.87	1.08	.62	4.39	.82	.58
Self-esteem index	3.74	.52	—	4.22	.48	—

NOTE: N = 1,628 with up to 2.5 percent missing data.
*Response of "almost always true" coded 5 (high self-esteem).
†Response of "never true" coded 5 (high self-esteem).
‡Item-Index correlation.

Cobb, Brooks, Kasl, and Connelly (1966). Respondents were asked to indicate on a five-point scale how often each item was true for them. The five response categories—almost always, often, sometimes, seldom, and never—are assigned codes from 1 to 5, with higher values assigned to responses reflecting higher self-esteem. The scale is nearly balanced with six positive items and four negative items. The self-esteem index consists of an unweighted mean of the 10 items, with up to two missing values allowed. Table 5-1 includes the means, standard deviations, and item index correlations (uncorrected for part-whole inflation) for 1966 (Time 1) and 1974 (Time 5). While there was some variability, the item-index correlations were fairly similar across items; generally, the correlations for 1974 were slightly stronger than those for 1966. Factor analyses performed on both the 1966 and 1974 items revealed a strong first factor in each case, explaining 64 percent of the 1966 common variance and 69 percent of the 1974 common variance. The item loadings ranged from .38 to .69.

Coefficient alphas were .75, .76, .79, .80, and .81 for 1966, 1968, 1969, 1970, and 1974, respectively. A single test-retest reliability was estimated using a path analysis approach as developed by Heise (1969). This estimate, which assumes that the reliability is the same at each time, was .75. Test-retest reliabilities were also computed for each com-

TABLE 5-2

Cross-Time Self-Esteem Correlations and Stability Coefficients

	Self-Esteem in				
	1966	1968	1969	1970	1974
Self-Esteem in 1966	1.00	.74	.65	.58	.40
Self-Esteem in 1968	.53	1.00	.88	.79	.54
Self-Esteem in 1969	.48	.64	1.00	.89	.61
Self-Esteem in 1970	.42	.56	.65	1.00	.69
Self-Esteem in 1974	.30	.40	.44	.49	1.00
M	3.74	3.83	3.88	3.90	4.22
SD	.52	.49	.50	.49	.48
N	1622	1501	1492	1408	1594

NOTE: Product-moment correlations are below the diagonal; stability coefficients are above. The stability coefficients were computed using a path analysis approach as developed by Heise (1969).

bination of three measurements, using formulas suggested by Heise. (If three measurements are made at Times A, B, and C, the reliability is computed as $r_{AB}r_{BC}/r_{AC}$.) With five measurement points, there are 10 possible combinations of three measurements. Each of the 10 reliability coefficients was computed; the range was .69 to .74, with a mean of .71. All these estimates of reliability, both internal consistency and test-retest, seem acceptably high.

While the reliability of a measure can be estimated in several ways, validity is another matter. Construct validity is the appropriate approach for a variable such as self-esteem (Wylie, 1974, p. 38). Self-esteem, we hypothesized, should relate to other variables in certain directions, thereby providing evidence on construct validity. Self-esteem correlated in the expected directions with measures of intellectual ability, somatic symptoms, negative affective states, happiness, rebellious behavior in school, and needs for self-development and social approval.

Overall Changes in Self-Esteem

Self-esteem scores were fairly high for our respondents at the start of tenth grade, and gradually rose to a level one standard deviation higher during the nearly eight-year span of the longitudinal study. The mean scores included in Table 5-2 show a modest increase in self-esteem throughout high school (1966 to 1969), rather little change during the following year (1969 to 1970), and a more substantial increase during the next four years (1970 to 1974). The pattern of change is consistent across all 10 items in the self-esteem scale; Table 5-1 shows for each item an increase in mean score and a decrease in standard deviation from 1966 to 1974. The decrease in standard deviation may reflect a ceiling effect at the item level, since the mean score for each item moved closer to the upper limit of self-esteem. At the index level, however, there is less evidence of a ceiling effect, since the standard deviation dropped only slightly from .52 to .48.

The pattern of correlations among the five self-esteem measurements, presented in Table 5-2, suggests a process of gradual evolution and shift throughout the period we studied. As the table indicates, the longer the time interval between any two self-esteem measurements, the lower the correlation. The table also includes stability coefficients, which are estimates of the "true" cross-time correlations after correcting for unreliability in the measures (Heise, 1969). Again, the longer the time interval, the lower the stability. One exception to this pattern may be worth noting: the correlations and stability coefficients involving self-esteem scores in 1966 were somewhat lower than would be expected strictly on the basis of the time intervals. Thus, for example, the stability of self-esteem scores during the 18-month interval from Time 1 to Time 2 was lower than the stability during the 24-month interval from Time 2 to Time 4. Except for the Time 1 data, however, the cross-time stability of self-esteem is almost perfectly linearly predictable from the length of the time interval involved.

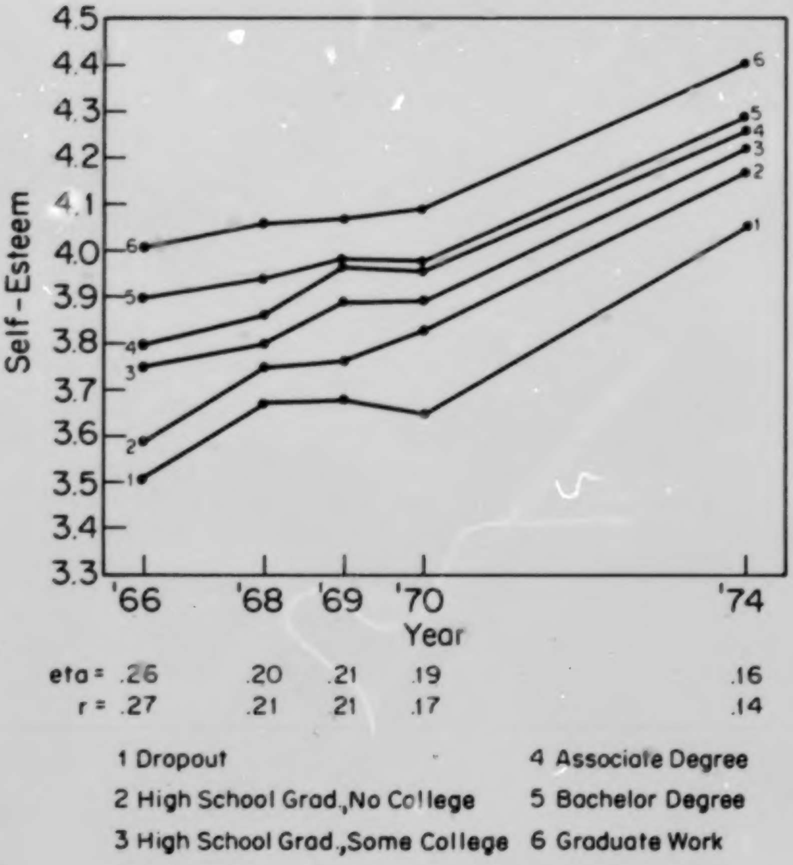
Links to Educational Attainment and Related Factors

Educational Attainment. Self-esteem scores for six categories of educational attainment, ranging from high school dropouts to those in graduate school, are presented in Figure 5-1. Consistent with our expectations, we found a positive correlation between self-esteem and level of educational attainment—the higher the level of education a respondent eventually attained, the higher was his self-esteem throughout the course of the study. Indeed, the degree of consistency in the relationship is striking; from the start of tenth grade to a point nearly eight years later, the ordering of mean self-esteem scores (from lowest to highest) is identical to the ordering of educational attainment categories, with those who became high school dropouts always lowest in average self-esteem and those who went on to graduate training always highest (differences among the six group means are significant at $p < .001$ for all five times). Moreover, the relationship between self-esteem and educational attainment (as we scaled it) is almost perfectly linear.[2]

The trend over time for self-esteem was basically upward, with each subgroup showing a largely parallel pattern of increases in mean scores. One exception, while not extremely large, is noteworthy; the self-esteem of high school graduates who did not continue their education (Group 2) rose during the year following high school, whereas the scores for dropouts (Group 1) declined slightly during the same period. This relative loss

FIGURE 5-1

Self-Esteem Related to Educational Attainment



NOTE: The data underlying this figure can be found in Appendix E, Table E-5-1.

in self-esteem for the dropout group was mostly of limited duration; four years later (in 1974) the difference between Groups 1 and 2 had shrunk to a level nearly the same as during the first three data collections.

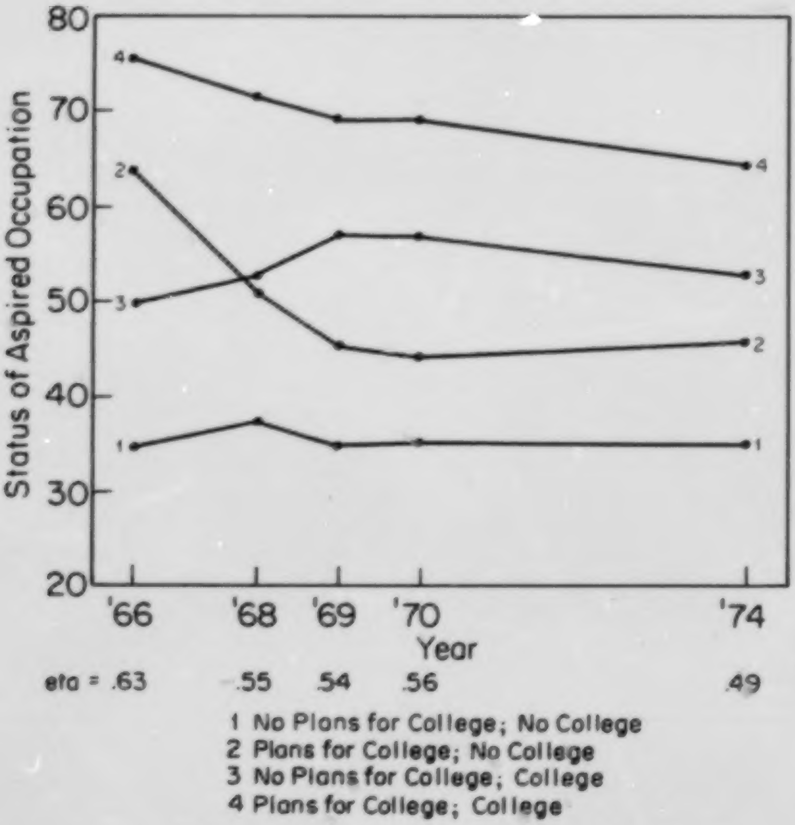
The most surprising finding in the figure is the change in the strength of correlation: self-esteem measured at the beginning of tenth grade correlated more strongly with eventual educational attainment than did self-esteem measured *after* the educational attainment levels had been reached. This tendency for the self-esteem trend lines to converge during high school and the years that followed is evident in the figure itself (especially if we disregard the relatively small Group 1), and it is also reflected in the drop in correlation values (from $r = .27$ in 1966 to $r = .14$ in 1974, $p < .01$). We will discuss this finding at some length later; for the present, it is sufficient to note that a steady decrease in self-esteem differences among educational attainment subgroups is quite the opposite of what would be projected if we assume a pattern of reciprocal causation between early self-esteem, educational attainment, and later self-esteem.

College Plans versus Attainment. Most of those who entered college had planned to do so from the start of the study, and this may help to explain why self-esteem measured as early as the start of tenth grade showed a substantial correlation with later educational attainment. On the other hand, quite a few young men initially planned to enter college but did not succeed in doing so, while others who did not plan on college at Time 1 eventually did enter. Earlier analyses of the data from Time 1 through Time 4 demonstrated that shifts in college plans were associated with shifts in occupational aspirations; those who initially planned to enter college but failed to do so showed a substantial drop in status of aspired occupations, whereas those whose initial plans did not include college but who eventually did embark on higher education showed a corresponding rise in status of aspired occupation (Volume III, pp. 126–131). This analysis has been extended through Time 5, and the results are presented in Figure 5-2. Note that between Time 1 (start of tenth grade) and Time 3 (end of school for most) there occurred shifts in occupational aspirations that can be interpreted as an adjustment to realities—at least the realities reflected in eventual educational attainments. Note also that the pattern of group differences in occupational aspirations remained essentially stable during the five-year period from Time 3 through Time 5: those who planned to enter college and did so (Group C/C) had the highest mean occupational aspirations, those who did not initially plan to do so but later entered college (Group NC/C) were next highest, those who neither planned to nor entered college (Group NC/NC) were lowest in mean occupational aspirations.

When attainments fail to measure up to aspirations, is there a corresponding drop in self-esteem? Coopersmith (1967, p. 29) cited William James' view of self-esteem as reflecting, at least in part, " . . . the ratio

FIGURE 5-2

Status of Aspired Occupation Related to College Plans versus Attainment



NOTE: The data underlying this figure can be found in Appendix E, Table E-5-2.

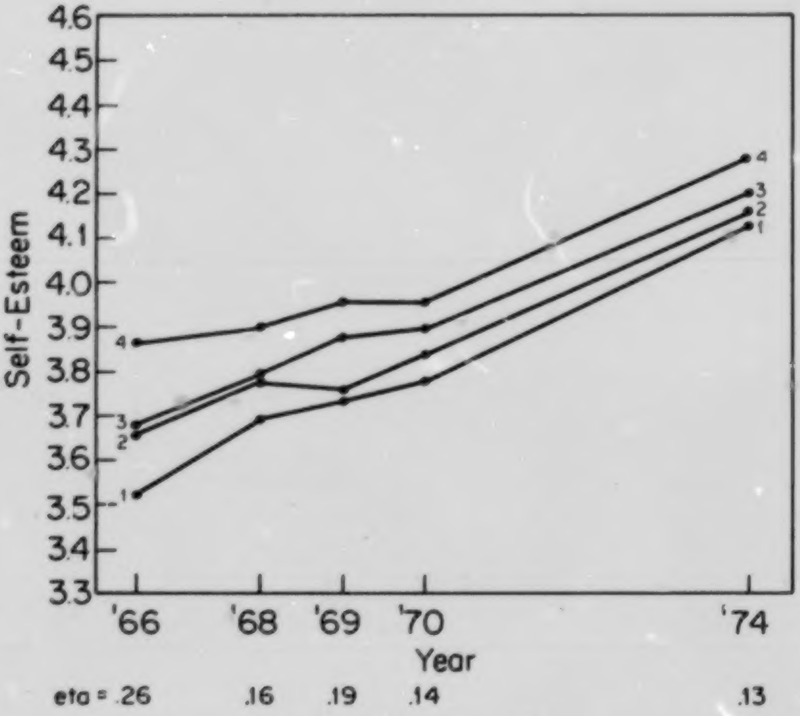
of our actualities to our supposed potentialities . . . " or the ratio between success and pretensions. This theory suggests that those who planned to enter college but failed to do so (Group C/NC) should show a decrease in self-esteem relative to other groups, whereas the group whose attainments exceeded their initial aspirations (Group NC/C) should show a relative increase. In other words, self-esteem scores should show a pattern of shift somewhat similar to that shown for occupational aspirations in Figure 5-2. The results for self-esteem, presented in Figure 5-3, clearly fail to confirm these expectations. Instead, we find that self-esteem scores, if anything, "anticipated" the later shifts in educational and occupational aspirations. Throughout all five points in time the mean self-esteem scores for the four groups were ordered in the same way as occupational aspirations were ordered from Time 3 to Time 5—the C/C Group was highest, NC/C next highest, C/NC lower, and NC/NC lowest. Here again, as we saw earlier in Figure 5-1, the differences in self-esteem were stronger at Time 1 than at later points in time (eta values drop from .27 for Time 1 self-esteem to .13 for Time 5 self-esteem).

How can we account for this finding that self-esteem scores seemed to "anticipate" educational attainments and later occupational aspirations for the four subgroups we have just been examining? One possibility, of course, is that self-esteem is among the causes of attainment (A causes B). An alternative explanation is that other (prior) factors which play an important part in determining educational attainment also contribute to self-esteem (C causes both A and B). We set out to investigate the latter possibility by examining three dimensions known to have an important impact upon college entrance: academic ability, high school grades, and family socioeconomic level. Along each of these dimensions, the four groups showed the same ordering as was found for self-esteem—C/C highest, NC/C next highest, C/NC lower, and NC/NC lowest—and the relationships were quite strong (eta values ranged from .41 to .50). These findings suggest that factors such as ability, grades, and family socioeconomic level, all of which predict later educational attainment, may also be among the determinants of self-esteem. We turn next to an exploration of such additional factors and their links to self-esteem.

Other Factors Linked to Attainment and Self-Esteem. Given the findings outlined above, it seemed important to explore more directly and in greater detail the relationships between self-esteem and a number of variables which Volume III had shown to be predictors of educational attainment. These factors, some of which were measured at several points in time, include family socioeconomic level, academic ability, grades, self-concept of school ability, and instances of rebellious and delinquent behavior in school. Their correlations with self-esteem (at all five points in time), as well as their correlations with educational attainment, are presented in Table 5-3. (Also included in Table 5-3 for comparison purposes are three measures of attainment as of 1974: level of

FIGURE 5-3

Self-Esteem by College Plans versus Attainment



1 No Plans for College; No College
2 Plans for College; No College
3 No Plans for College; College
4 Plans for College; College

NOTE: The data underlying this figure can be found in Appendix E, Table E-5-3.

TABLE 5-3

Self-Esteem Correlated with Measures of Attainment and Related Factors

	Self-esteem					Educ. Attain.	Stat. of Occ.
	1966	1968	1969	1970	1974	1974	1974
Socioeconomic Level '66	.16	.11	.12	.12	.07	.47	.20
Number of Siblings	−.07	−.09	−.06	−.05	.00	−.30	−.19
Ability '66	.21	.18	.17	.20	.13	.53	.30
Grades: 9th Grade	.26	.21	.17	.16	.12	.50	.32
Grades: 10th Grade	.25	.25	.20	.16	.14	.50	.29
Grades: 12th Grade	.21	.25	.21	.14	.12	.50	.30
Self-Concept of School Ability '66	.36	.28	.27	.24	.17	.45	.24
Self-Concept of School Ability '68	.29	.32	.29	.25	.18	.45	.21
Rebellious Behavior in School '66	−.36	−.26	−.18	−.20	−.15	−.29	−.18
Rebellious Behavior in School '68	−.21	−.27	−.19	−.17	−.10	−.27	−.15
Delinquent Behavior in School '66	−.19	−.10	−.04	−.06	.00	−.32	−.14
Delinquent Behavior in School '68	−.18	−.14	−.11	−.07	−.06	−.39	−.17
Delinquent Behavior in School '69	−.15	−.12	−.10	−.08	−.03	−.37	−.19
College Plans '66	.22	.13	.12	.10	.10	.45	.23
College Plans '68	.22	.19	.16	.14	.11	.45	.20
College Plans '69	.25	.22	.20	.16	.16	.67	.30
Status of Aspired Occupation '66	.19	.13	.09	.11	.11	.47	.26
Status of Aspired Occupation '68	.20	.15	.13	.12	.09	.53	.28
Status of Aspired Occupation '69	.21	.18	.16	.14	.08	.56	.30
Status of Aspired Occupation '70	.21	.17	.15	.14	.10	.59	.31
Status of Aspired Occupation '74	.15	.15	.12	.12	.11	.56	.45
Educational Attainment '74	.27	.21	.21	.17	.14	1.00	.41
Status of Attained Occupation '74	.15	.13	.14	.20	.16	.41	1.00
Employment vs. Unemployment '74	.03	.00	.05	−.01	.10	.06	.12

NOTE: Based on a *N* of 1600 and a design effect of 2.25, an r of .08 is significant at $p < .05$, and an r of .10 is significant at $p < .01$.

education completed, employment versus unemployment, and status of occupation.)

Note the correlations in the column which is second from right; they indicate that all of the measures included in the table are linked to educational attainment. Most of the relationships are quite substantial.

The more important finding displayed in the table is that each of the dimensions included is correlated with self-esteem. In every instance the early measures of self-esteem, usually the 1966 scores, show the strongest correlations, whereas the weakest correlations involve self-esteem as measured in 1974. It is worth noting that the self-concept of school ability measured in 1968 shows the highest correlation with self-esteem measured at the same point in time, and this is also true for the 1968 measure of rebellious behavior in school (but not for the 1968 measure of delinquent behavior in school). We were not surprised to find some heightening of correlations among variables measured in the same data collection; on the contrary, it is surprising that this "time matching" phenomenon does not appear more often. Other dimensions measured at multiple points in time, such as college plans (Times 1 through 3) and occupational aspirations (Times 1 through 5), show little or no "time matching" effect. Instead, plans or aspirations, no matter when *they* were measured, show the strongest association with tenth grade (1966) self-esteem and progressively weaker relationships with later self-esteem.[3]

Two implications drawn from these findings are particularly relevant for our exploration of the linkage between success and self-esteem. First, it seems clear that those factors which help to determine later educational attainment are also determinants of self-esteem (C causes both A and B). Second, it appears that these educationally-relevant factors make a significant contribution to self-esteem during the early high school years, but this contribution becomes steadily less important as young men progress through high school and continue into other educational and/or occupational environments. These implications are entirely consistent with our earlier findings about self-esteem and educational attainment (Figure 5-1). Taken as a whole, the pattern of results suggests that things having to do with the self-concept of educational success—academic skills, past classroom performance, future aspirations, and the like—undergo some reduction in centrality for the self-esteem of young men during the late high school years and the period that follows.

We suggested earlier that the centrality of academically relevant factors might be reduced among the young men in our study who did not continue their education beyond high school, whereas it might remain high among those who did go on to college. The correlations shown in Table 5-3 were recomputed separately for four categories of respondents: 1. those who initially (at the start of tenth grade) planned to go to college and did so, 2. those who planned to but did not attend, 3. those who did not initially plan on college but later attended, and 4. those who neither planned to nor did attend. Contrary to our expectation, there

TABLE 5-4

Cross-Time Self-Esteem Scores for Employed and Unemployed

1974 Employment Status		Self-Esteem 1966	1968	1969	1970	1974
Employed (*N* = 1,205)	*M*	3.72	3.82	3.88	3.89	4.23
	SD	.51	.47	.49	.48	.47
Unemployed (*N* = 111)	*M*	3.66	3.81	3.79	3.91	[illegible]
	SD	.56	.55	.52	.53	[illegible]
Difference	*M*	.06	.01	.09	−.02	.18*

*t = 3.78, $p < .05$, two-tailed, incorporating design effect

was no indication that the centrality of academic factors dropped more sharply among those who did not go on to college.

Impact of Occupational Experiences

In this chapter we deal with two aspects of occupational experience: employment versus unemployment, and occupational status (Duncan scale).[4]

Unemployment. Table 5-4 contrasts those who were unemployed during the 1974 survey (Time 5) with those who were employed full time or part-time in the civilian work force (full time students and those in military service are omitted from the table). The bottom line of the table indicates there were only small and nonsignificant differences in self-esteem between the two groups until 1974, at which point the difference reaches about one-third of a standard deviation. Although this difference is not so large as to suggest a devastating impact of unemployment upon self-esteem, the finding does indicate that failure to have a job has some negative effect on self-esteem.

The negative impact of unemployment may be linked to educational level. Those who have followed the socially-approved path of high school graduation and perhaps also college have "done their part," so to speak, and thus may be less inclined to view unemployment as their own fault. High school dropouts, on the other hand, have followed a path which is disapproved; public announcements proclaim that dropping out "doubles the chances of being unemployed," and consequently the unemployed dropout may be more likely to blame himself for his predicament. We examined the impact of unemployment (as of 1974) separately for three levels of educational attainment: dropouts without high school diplomas, high school graduates with no further education, and those who entered college (including those who completed associate and bachelor degrees). Among the college entrants, the mean gain in self-esteem scores from 1966 to 1974 was .44 for the employed (*N*=659) and .38 for the unemployed ($N=49$); this difference is small and of little consequence. Among the high school graduates who did not enter college, the mean gain in self-esteem was .58 for the employed ($N=387$) and .50 for the unemployed ($N=39$)—again, a rather small difference. Among high school dropouts, on the other hand, the difference is more substantial; the mean gain in self-esteem was .62 among the employed ($N=83$) but only .31 among the unemployed ($N=18$). While this difference falls short of statistical significance given the small number of unemployed dropouts, it is certainly consistent with our suggested explanation.

To summarize, we found for the sample as a whole that the dimension of employment-unemployment seemed to affect self-esteem measured at the same point in time (1974) but had little relationship to earlier measures of self-esteem. Our analysis of educational subgroups produced some differences which, although not statistically significant, suggested that the negative impact of unemployment on self-esteem may be more pronounced among high school dropouts than among those who have completed high school.

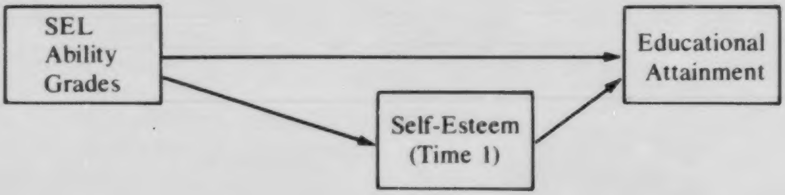
Occupational Status. Given our initial theorizing about the positive impact of success on self-esteem, we expected that young men who attained higher status jobs would show above average gains in self-esteem; thus we expected that occupational status in 1974 would be positively correlated with self-esteem in 1974, and that the relationship with earlier measures of self-esteem would be weaker. The correlations presented in Table 5-3 show that occupational status in 1974 had basically the same strength of association with self-esteem no matter when self-esteem was measured. (The slightly higher correlation with 1970 self-esteem was not significantly different from the other correlations and may have represented nothing more than chance variation.) One of the problems with these zero-order correlations is that a number of the factors which may be among the causes of educational attainment and self-esteem are also related to occupational status. Thus we may be able to get a clearer picture of what occupational success *adds* to self-esteem if we introduce statistical controls for these other prior influences.

Multivariate Analyses

Earlier in this chapter we distinguished among three patterns of causation which might produce a relationship between self-esteem (A) and attainment (B)—A causes B, B causes A, and C (other variables) causes both A and B. We have presented a good deal of data to indicate that relationships do exist among these variables, including a number of those factors (the C variables) which may be prior causes of both self-esteem and attainment. Now we will undertake a series of

FIGURE 5-4

Causal Relationships among Early Self-Esteem, Educational Attainment, and Other Variables



regression analyses designed to distinguish among these alternative causal patterns.

Educational Attainment. Let us begin with the link between tenth grade (Time 1) self-esteem and educational attainment five years beyond high school (Time 5). The product-moment correlation between these two dimensions is a rather substantial .27. Does this mean that early self-esteem is an important cause of later educational attainment (A causes B), or does it mean that some of the factors which contribute heavily to self-esteem in tenth grade are also determinants of later educational success (C causes both A and B)? Of all the dimensions shown in Table 5-3, the first few—family socioeconomic level, academic ability, and ninth-grade classroom grades—seem particularly appropriate for analysis as factors which may play a causal role in determining both educational attainment and tenth-grade self-esteem. (The other dimensions in Table 5-3 may also play a causal role; however, their position in a causal sequence is less clearly a prior one.)

Figure 5-4 depicts schematically the relationships between tenth-grade self-esteem, educational attainment, and the other causal variables (SEL, ability, and grades). Background, ability, and past school performance are all presented as causes of both self-esteem and educational attainment (the dashed arrows show the C causes both A and B pattern); additionally, tenth-grade self-esteem is presented as a cause of educational attainment (the solid arrow shows the A causes B pattern). The analysis question to be considered is this: how strong is the link between self-esteem and educational attainment when the other factors are also part of the equation?

The results of the necessary multiple regression analysis are contained in Table 5-5.[5] The key relationship is the standardized regression coefficient (beta) between tenth-grade self-esteem and educational at-

TABLE 5-5

Multiple Regression Analysis Predicting Educational Attainment

Predictor	Beta	T-Ratio of Beta
Family Socioeconomic Level	.256	12.00
Ability Composite	.233	10.03
Average Grade: 9th Grade	.334	15.58
Self-Esteem at Time 1	.094	4.82
Multiple Correlation Coefficient	.667	(adjusted = .666)

tainment, a value of .09. This suggests that the direct causal connection between self-esteem and later educational attainment (A causes B) is very weak at best. On the other hand, the other regression coefficients and the multiple correlation of .67 fit very well with the "C causes both A and B" interpretation. Thus we conclude that the zero-order correlation of .27 between Time 1 self-esteem and educational attainment occurs largely because they share a common set of prior determinants.

Now let us explore educational attainment as a possible cause of self-esteem. In this case, of course, we will examine self-esteem measured at the end of the study (Time 5). The product-moment correlation between educational attainment and Time 5 self-esteem is .14. Is that because educational success boosts self-esteem (B causes A), or is it because other factors contribute to both (C causes both A and B)? If we treat as other factors the same dimensions of SEL, ability, and grades that we used in the previous analysis, the relationships are as depicted in Part 1 of Figure 5-5.

FIGURE 5-5

Causal Relationships among Later Self-Esteem, Educational Attainment, and Other Variables

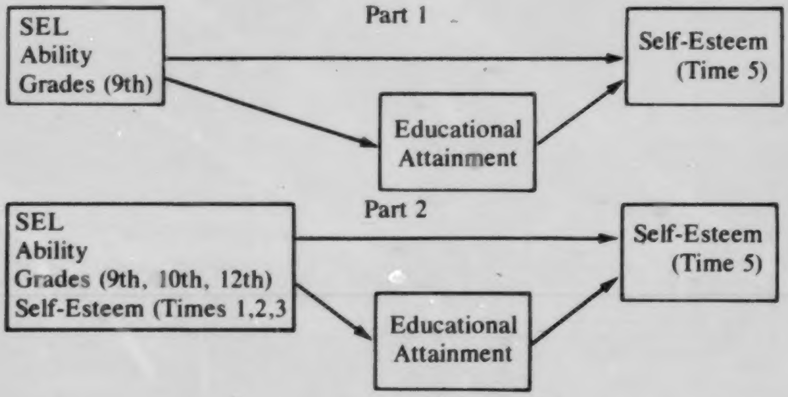

Part 1
SEL
Ability
Grades (9th)
Self-Esteem (Time 5)
Educational Attainment
Part 2
SEL
Ability
Grades (9th, 10th, 12th)
Self-Esteem (Times 1,2,3
Self-Esteem (Time 5)
Educational Attainment

TABLE 5-6

Multiple Regression Analyses Predicting Time 5 Self-Esteem from Educational Attainment and Other Variables

Predictor	Beta	T-Ratio of Beta
Part 1		
Family Socioeconomic Level	−.020	0.67
Ability Composite	.072	2.27
Average Grade: 9th Grade	.042	1.39
Educational Attainment	.089	2.70
Multiple Correlation Coefficient	.159 (adjusted = .152)	
Part 2		
Family Socioeconomic Level	−.023	0.87
Ability Composite	.039	1.37
Average Grade: 9th Grade	−.008	0.24
Average Grade: 10th Grade	.018	0.55
Average Grade: 12th Grade	−.025	0.81
Self-Esteem at Time 1	.052	1.89
Self-Esteem at Time 2	.180	5.85
Self-Esteem at Time 3	.296	10.06
Educational Attainment	.025	0.81
Multiple Correlation Coefficient	.480 (adjusted = .475)	

The multiple regression analysis corresponding to Part 1 of Figure 5-5 is presented in Table 5-6, Part 1. The standardized regression coefficient for educational attainment predicting Time 5 self-esteem is .09. This suggests only a weak causal relationship; but perhaps even that relationship is overstated. Since we are dealing with post-high school educational attainment and its impact on self-esteem measured five years after high school, it seems appropriate to include among our prior causal factors the measures of scholastic performance (grades) obtained at several points throughout high school. More important, it seems reasonable to include earlier self-esteem as an important prior cause of later self-esteem; accordingly, we included self-esteem measured at three points during the high school years (Times 1, 2, and 3) among the prior factors which help to determine later (Time 5) self-esteem. The analysis is depicted schematically in Part 2 of Figure 5-5.

The multiple regression analysis corresponding to this expanded treatment of prior causal factors is presented in Part 2 of Table 5-6. Clearly, the most important predictors of self-esteem at Time 5 are the earlier measures of self-esteem, especially self-esteem at Times 2 and 3. The standardized regression coefficient for educational attainment predicting Time 5 self-esteem is reduced to a trivial .025, strongly suggesting that there is virtually no direct causal connection between educational attainment and self-esteem five years beyond high school.

(Two other regression analyses are worth a passing mention here. One predicted Time 5 self-esteem using only earlier self-esteem—measured at Times 1, 2, and 3—plus educational attainment. The standard regression coefficient for educational attainment was .027—almost identical to the .025 shown in Table 5-6. Some might object that by including Time 3 self-esteem in our regression equations we may have inadvertently included some "anticipatory" effects of educational attainment, since by the end of high school many students were already aware of educational levels they would eventually attain. It may be reassuring to note that in another regression analysis, which added only Time 1 self-esteem to the predictors shown in Part 1 of Table 5-6, the beta coefficient for educational attainment was only .047.)

Unemployment. For the employment-unemployment dimension, we repeated the series of regression analyses outlined above (substituting employment for educational attainment). Since there was no positive correlation between initial (Time 1) self-esteem and employment at the end of the study (r = .03), there was no reason to expect that self-esteem would emerge as a cause of later employment or unemployment (A causes B), and the multiple regression analysis revealed no such relationship. On the other hand, there was a modest correlation (r = .10) between employment and self-esteem at Time 5. (Moreover, that modest correlation represents a self-esteem difference of more than one-third of a standard deviation between the employed and unemployed.) So the question can be raised: did being employed (or unemployed) at Time 5 have an effect on self-esteem at that time (B causes A), or were both caused by other factors (C causes both A and B)? Table 5-7 presents the regression analyses necessary to deal with these questions. The standardized regression coefficient for employment predicting to self-esteem (Time 5) was .10 with SEL, ability, and early grades included in the equation; the value shrank only very slightly to .09 when self-esteem and grades throughout high school were added to the equation. Thus we concluded that the impact of unemployment on self-esteem was almost entirely independent of the other factors being examined.

Occupational Status. The regression analyses were repeated once more, this time to examine the relationship between self-esteem and occupational status. The zero-order correlation between tenth-grade (Time 1) self-esteem and occupational status five years after high school (Time 5) was .15. This suggested that early self-esteem might have a modest impact upon later job attainment (A causes B); however, when we included other factors in the regression equation the results fit better with the view that factors of background and ability influenced both (C causes A and B). Table 5-8 presents that analysis, showing a standard-

TABLE 5-7

Multiple Regression Analyses Predicting Time 5 Self-Esteem from Employment and Other Variables

Part 1

Predictor	Beta	T-Ratio of Beta
Family Socioeconomic Level	.006	0.20
Ability Composite	.091	2.96
Average Grade: 9th Grade	.072	2.61
Employment (vs. Unemployment)	.098	3.96
Multiple Correlation Coefficient		.175 (adjusted = .168)

Part 2

Predictor	Beta	T-Ratio of Beta
Family Socioeconomic Level	−.015	0.58
Ability Composite	.042	1.49
Average Grade: 9th Grade	−.005	0.15
Average Grade: 10th Grade	.029	0.87
Average Grade: 12th Grade	−.028	0.92
Self-Esteem at Time 1	.051	1.87
Self-Esteem at Time 2	.184	6.01
Self-Esteem at Time 3	.291	9.94
Employment (vs. Unemployment)	.086	3.87
Multiple Correlation Coefficient		.480 (adjusted = .476)

TABLE 5-8

Multiple Regression Analysis Predicting Occupational Status

Predictor	Beta	T-Ratio of Beta
Family Socioeconomic Level	.060	2.24
Ability Composite	.167	5.77
Average Grade: 9th Grade	.212	7.94
Self-Esteem at Time 1	.053	2.17
Multiple Correlation Coefficient		.372 (adjusted = .369)

ized regression coefficient of only .05 for initial self-esteem predicting to later occupational attainment.

When we explored the possibility that occupational status might have an impact on self-esteem (at Time 5), we began with another modest zero-order correlation—a value of .16. The regression analysis in Table 5-9 shows that this relationship changed moderately by controlling other factors; with controls for background, ability, grades, and self-esteem throughout high school the standardized regression coefficient was .09. This suggests that the zero-order correlation reflects both patterns of causation—occupational status had a small direct impact on self-esteem (B causes A), but other factors had an impact on both and thus contributed to the relationship (C causes both A and B).

We have presented elsewhere a somewhat more elaborate path

TABLE 5-9

Multiple Regression Analyses Predicting Time 5 Self-Esteem from Occupational Status and Other Variables

Predictor	Beta	T-Ratio of Beta
Part 1		
Family Socioeconomic Level	−.004	0.14
Ability Composite	.073	2.36
Average Grade: 9th Grade	.047	1.65
Occupational Status	.119	4.51
Multiple Correlation Coefficient	.182 (adjusted = .176)	
Part 2		
Family Socioeconomic Level	−.022	0.86
Ability Composite	.031	1.11
Average Grade: 9th Grade	−.015	0.47
Average Grade: 10th Grade	.017	0.51
Average Grade: 12th Grade	−.030	0.99
Self-Esteem at Time 1	.051	1.87
Self-Esteem at Time 2	.181	5.91
Self-Esteem at Time 3	.293	9.99
Occupational Status	.089	3.73
Multiple Correlation Coefficient	.480 (adjusted = .475)	

analysis of these data, in which educational attainment and occupational status, plus other factors all are used to predict Time 5 self-esteem (Bachman and O'Malley, 1977). The results are very similar to those presented here.

Discussion of Findings and Implications

We stated at the outset of this chapter that self-esteem is likely to be linked to educational and occupational attainment—probably through a number of complexly interrelated patterns of causation. That general expectation has certainly been confirmed by our analyses, although some of our specific expectations about causal connections have not.

Change and Stability in Self-Esteem. Our findings suggest that self-esteem is not a characteristic of personality that is firmly fixed by the time a young man enters high school. On the contrary, we found a gradual, but quite substantial, rise in average self-esteem throughout high school and particularly during the five years following high school. Our analysis was not designed to uncover the probable cause of this rise. It does seem reasonable, however, to rule out the notion that leaving high school produces a sudden and marked shift in self-evaluation. Mean self-esteem scores did not show a greater than usual increase during the first year following high school, and stability estimates are virtually identical for the one-year periods that preceded and followed graduation. Perhaps the gradual rise in self-esteem scores among young men during this period simply reflects their increasing maturity and the resulting increase in status, opportunities, and privileges.

Although we found a substantial amount of change in self-esteem over time, we also found a good deal of stability in scores from one year to another. We estimate that, among young men in their late teens and early twenties, self-esteem (after adjustments for measurement unreliability) has a stability of nearly .9 for one-year intervals. Over longer periods the stability is proportionately lower, so that for the total eight-year span of the study we estimate the stability of self-esteem to be .4. These findings concerning stability, coupled with the fact that the overall rise in scores was quite gradual, provide some support for the view of self-esteem as a relatively enduring characteristic rather than something which shifts abruptly from one situation to another. Change certainly does occur during and following late adolescence, but the change seems to be gradual and developmental rather than revolutionary.

The Changing Link with Education. We found self-esteem linked with educational attainment; however, the linkage was complex and showed evidence of change over time. The young men in our sample who eventually completed college and entered graduate training showed the highest mean self-esteem; those who never attained the high school diploma had the lowest mean self-esteem, and the groups between these two extremes had mean self-esteem scores which neatly matched their level of educational attainment. The finding that self-esteem was positively related to educational attainment is not surprising. But the relationship was not strongest and clearest at the end of the study, when individuals had sorted themselves into the several levels of educational attainment. Instead, the differences were strongest among self-esteem scores obtained at the beginning of the study, apparently "anticipating" educational attainment. And that is surprising.

The multivariate analyses indicate rather clearly that the *primary* basis for the correlation between high school self-esteem scores and later educational attainment is that those aspects of family background, academic ability, and past school performance which predict later educational success also play an important part in the self-esteem of young men in tenth grade (C causes both A and B). In addition, it appears that factors of background, ability, and past school performance become less and less important for self-esteem as a young man continues through high school and beyond (Table 5-3). This pattern of declining importance for self-esteem appears with great consistency across a number of dimensions—family socioeconomic level, test scores, grade-point averages, rebellious and delinquent behaviors in school, and educational and occupational aspirations. (The very uniformity of this pattern might suggest that the later self-esteem scores are simply less predictable, no matter what variables we attempt to correlate with them; however, our other findings showing the impact of unemployment and occupational status on later self-esteem rule out such an explanation.)

These declining correlations with self-esteem can be interpreted in terms of shifting centrality; those attributes of self-identity which have to do with conventional educational success have less centrality, and thus less impact on self-esteem, as young men move through the final years of high school and go on to other experiences. This decreasing centrality of the factors linked to academic success is not limited to those who end their education with high school; it holds true also for those who enter college. In this connection it is worth summarizing a finding from *Youth in Transition,* Vol. III: the value placed on striving for academic achievement—studying hard to get good grades and academic honors—showed a decline throughout the high school years, and that decline was steepest among those who later went on to college (pp. 118–20). We conclude that, at least among young men who completed high school in the late 1960s, educational success became a less vital part of the self; this was particularly true among those who were most successful, the ones who went on to college.

The Impact of Occupational Attainment. One dimension of occupational success is status or prestige. Our findings, like the findings of many other researchers, show a substantial correlation between educational attainment and job status. The analyses in earlier chapters have shown that the same dimensions of family background, ability, and aspirations which predict educational attainment also predict job status. Thus we would expect to find at least some association between occupational status and self-esteem simply because self-esteem—especially during the early high school years—is linked to family background, ability, and aspirations. The more important question is whether the job status that a young man attains in his early twenties makes any *additional* contribution to his self-esteem.

Our multivariate analyses indicated that job status did indeed make a unique, though modest, contribution to self-esteem. After controls for background and ability, and even after controls for earlier measures of self-esteem, the status of a young man's job made some contribution to his current level of self-esteem.

Another and perhaps more basic dimension of occupational attainment, particularly during a time of high unemployment, was simply having a job. We stated earlier that employment versus unemployment provided the clearest instance in our data of a contemporaneous environmental factor—the unemployment environment—having an impact on self-esteem. The young men in the study who were unemployed at the time of the last data collection showed lower-than-average self-esteem scores. Moreover, the findings suggested that the impact of unemployment on self-esteem may have been felt most heavily by those who failed to attain a high school diploma. Perhaps these young men were most inclined to blame themselves for their unemployment, since their lack of a diploma was something which many sources constantly remind them that they could—and should—take steps to correct.[6]

Thus, we conclude that occupational attainment, reflected in simply having a job as well as in the status of that job, has an impact on the self-esteem of young men in their early twenties.

Some Limitations

Some of our findings on self-esteem and education might have been interpreted very differently had they not been part of a longitudinal design. The 1974 data taken alone might have suggested some direct impact of educational attainment on self-esteem. The 1966 data taken alone would have shown self-esteem strongly linked to past academic performance, present academic ability, and academic aspirations for the future. Either picture by itself would have been incomplete and potentially misleading. Having said that, we must immediately acknowledge that our present longitudinal findings, while representing a considerable improvement over cross-sectional ones, have their limitations.

The ability to generalize from any single study, no matter how extensive, is always limited. Some limitations to the present work have already been mentioned; others are obvious. Most notably, our sample was limited to young men, and thus we cannot be sure that the same relationship between self-esteem and educational and occupational attainment would be found for young women. Douvan and Gold (1967), in their review of the literature on adolescent self-esteem, concluded that the self-esteem of boys and girls depends to some extent on different components, and that boys are more likely than girls to establish a sense of esteem "... by asserting competence to achieve in any one of a number of competitive fields (athletics, a career-line, intellectual activity, leadership in school affairs, responsibility in a job)" (p. 250). Our own guess is that some differences between boys and girls existed at the start of our longitudinal study in 1966, that they probably still exist to at least some degree, but that the differences are likely to diminish as views about women's and men's roles continue to change.

Another limitation to our sample and the present analysis is that we have not looked separately at racial subgroups, particularly blacks. Rosenberg and Simmons (1971) have recently discussed racial differences in self-esteem at some length, and our own earlier analyses included a brief examination of self-esteem scores for three different sets of black respondents (distinguished by geographical region and school segregation/integration). Our sample was not designed to support accurate generalizations about blacks, so our early analyses were tentative and carefully qualified. Perhaps our most important conclusion concerning racial differences in self-esteem and many other dimensions treated in the study was that it seemed unwise to treat blacks as a single analysis group (Volume II, pp. 197–201). This chapter has made no racial distinctions, partly because preliminary analyses indicated that controlling race would have made virtually no difference for the sample as a whole, and partly because we continue to feel that our sample is not adequate for separate racial analyses—particularly analyses as complex as those presented here.

We noted that views about sex roles seem to be undergoing considerable change, and thus we would be very cautious about using data collected in the 1960s or earlier as a basis for generalizing about sex differences in the seventies or eighties. But this is simply one example of a very broad problem. Cronbach (1975) argues convincingly that social science data—especially correlational data gathered in real-life situations—are subject to many interactions and extraneous factors, at least some of which are likely to change over time:

> Generalizations decay. At one time a conclusion describes the existing situation well, at a later time it accounts for rather little variance, and ultimately it is valid only as history. The half-life of an empirical proposition may be great or small. The more open a system, the shorter the half-life of relations within it are likely to be (pp. 122–23).

Those aspects of the social system we have been dealing with here—the links between attainment and self-esteem in young men—may have been especially open to change during recent years. During the period in which the young men in our sample were making the transition from adolescence (age 15) to young adulthood (age 23), they and the rest of society were also making the transition from the mid-sixties (1966) to the mid-seventies (1974). This was a turbulent interval involving substantial changes in the job market and increasingly critical discussion about the value of education. Thus the relationships we have been studying and trying to isolate may have been changing all the while—perhaps at a rate rapid enough to lead us to faulty conclusions.

The problems posed by social change—secular trends—are particularly troublesome for the longitudinal study which follows a single cohort for some period of time. As Buss (1973) and Schaie (1965) have pointed out, the data from such a study do not permit us to distinguish with certainty between genuine developmental or maturational trends and those changes which affect society as a whole.

Given the limitation outlined above, there are at least two quite different ways of interpreting our finding that educational success and its correlates became much less central to the self-esteem of the young men in our sample as they moved through high school and beyond. The first interpretation, and the one which we have emphasized, is that this shift in centrality is a fairly typical part of the developmental sequence followed by young people in this society. During the late high school years and the period which follows, the young person in the process of becoming an adult increasingly anticipates and experience situations in which self-evaluation depends on factors quite different from success in school; and this means that academic things became less dominant in shaping self-esteem. An alternative interpretation of our findings is that they reflect a particular secular trend or cultural change during the late sixties and early seventies—a general decline in the importance or value that society places on education and educational success. Trust in government declined dramatically during this period, and some would argue that faith in education as the pathway to success has also suffered a setback. The developmental and secular trend interpretations are not, of course, mutually exclusive; both may have played a part in shaping our findings. A clear estimate of the relative importance of each requires additional data from more than one cohort. For the present, the longitudinal analyses presented here demonstrate that self-esteem is significantly linked to educational and occupational attainment, and that the linkage is subject to change over the course of time.

Notes

[1] This chapter draws heavily on two earlier presentations of our data on self-esteem (Bachman and O'Malley, 1977; O'Malley and Bachman, 1976).

[2] This is based on a comparison of etas and product-moment correlations. The eta statistic is not restricted to linear relationships, whereas the product-moment correlation is; therefore, when the two statistics are nearly identical, as is true for the values presented in Figure 5-1, it indicates that the relationship is linear.

[3] Several of the measures included in Table 5-3 represent aspects of the self-concept. The clearest example is self-concept of school ability; but it could be argued that college and

occupational aspirations, and even self-reports of grades and misbehaviors in school, are also parts of an individual's self-concept. As such, these dimensions may be viewed as different components or facets of global self-esteem, rather than as separate and logically prior causes. (This might help to account for some of the "time matching" noted above; another possible explanation is correlated measurement error.) In any event, the general pattern of gradually lower correlations with later measures of self-esteem holds for these measures as well as the other ones in Table 5-3.

[4] We also examined hourly wage rates, but found them essentially uncorrelated with self-esteem measures at any point in time. This finding is consistent with other analyses of wage rate data in this study which show very few relationships.

[5] The t-ratio (unsigned) of beta, included in Table 5-5, is equal to beta divided by its standard deviation. Under an assumption of simple random sampling (and the other usual assumptions), a t-ratio of 1.96 would indicate that the null hypothesis—population beta equals zero—may be rejected with probability of error less than .05. Since our sample is not random, the actual t-ratio required for the .05 level of significance is somewhat higher.

[6] For a discussion of the "anti-dropout" campaign in the media, see *Youth in Transition*, Vol. III, and Bachman, 1972.

Chapter 6

CHANGE, STABILITY, AND THE IMPACTS OF SOCIAL EXPERIENCES

This chapter briefly gives our rationale and procedures for analyzing changes in motives, affective states, values, attitudes, aspirations, and behaviors. In some respects it would have been most logical to place this chapter ahead of our lengthy treatment of self-esteem; however, we felt it would be difficult to discuss issues of longitudinal analysis in the abstract.

The chapter on self-esteem focused upon only one outcome dimension and linked it to only two major areas of social experience—educational and occupational attainment. While educational and occupational attainment receive greatest attention in this volume, they are not the only dimensions of social experience we wish to consider. And although self-esteem is of particular interest to us, there are many other outcome dimensions to be covered in this analysis. The broad scope of measurement in this project has yielded more than a hundred combinations of experience and outcome dimensions, and most of the outcome dimensions have been measured at four or five points in time. Clearly, we will not be able to present the level of detailed analysis that we applied in our study of self-esteem; we will have to be much more selective.

Social Environments and Experiences

What environments and experiences of young men during their late teens and early twenties will we be exploring? Those related to education are especially important. A considerable body of research suggests that different amounts of education lead to different outcomes, not only in occupational attainment, but also in values and attitudes (Feldman and Newcomb, 1969; Withey, 1971). While we found no evidence that educational attainment produced gains in self-esteem, differences in educational experience may be related to changes along other outcome dimensions. Moreover, the sheer quantity of education may not be all that matters; some might argue that qualitative aspects of post-high school educational experiences are more important. Accordingly, the remainder of our analyses of educational impact will include two qualitative dimensions: a measure of the character and quality of the college or university attended, and the individual's major area of study.

Another very important set of experiences involves an individual's occupation. The occupational dimensions considered will, again, be unemployment and job status (Duncan scale). The previous chapter demonstrated that these aspects of the work role have some impact on self-esteem. Subsequent chapters will also consider whether they show effects on other outcome variables, including values, attitudes, and behaviors.

An additional dimension of experience, which is partly occupational but which includes a good deal more, is military service. We will be interested in whether service in the armed forces is linked to any differences and any differential changes along outcome dimensions.

We also will examine marriage and parenthood. We will be interested in how marriage and parenthood are related to our outcome dimensions, even though we will have a particularly difficult time in working out the direction(s) of causation that underlie any such relationships.

All of these factors can loom large in the lives of young men in their late teens and early twenties. We have referred to them as representing experiences and sometimes also as environments. When we designed and first wrote about the Youth in Transition project in Volume I, we considered it to be " . . . an exploration of the effects of social environments . . . " (p.v). This continues to be an apt description of our purposes, except that we have some degree of difficulty in using the term social environment. Certainly someone's present job represents a social environment—one which for most people is of great importance. But what can we say about a high school dropout who served three years in the Army and is presently unemployed? Perhaps we can refer to his unemployment as a kind of social environment—although it is much less precise than when we refer to a job as a social environment. But in what sense does his previous military service constitute a part of the present social environment? How does his having dropped out of high school represent a social environment, present or past? These questions are not easily answered. Of course, the individual carries around with him the memories of such experiences, perhaps some scars or some positive changes, and whatever credentials they have added to his record. All of them have become part of what Kurt Lewin called the "life space." But we find it cumbersome and potentially misleading to refer to all of these things as social environments. Accordingly, we prefer to speak of a variety of experiences which may have followed high school. This deliberately general term can cover contemporary social environments such as the present job, past social environments such as a term of military service or several years of college, and other aspects of life such as marriage and parenthood which involve ongoing role responsibilities. What these various things have in common is their potential for making a difference in the lives of young men.

Analysis Strategy

In our analyses of change, stability, and the impact of social experiences we have found it both necessary and desirable to rely heavily on product-moment correlations among variables. The use of product-moment correlations means, of course, that we concentrate on essentially linear relationships. To the degree that a relationship between two variables departs from a straight-line pattern, that relationship will be underestimated. We do not consider this to be a serious limitation in the present analysis for two reasons. First, from a conceptual standpoint, most of the relationships treated here are expected to be fairly linear. Second, we have actually examined many of the relationships between outcome dimensions and social experience (predictor) dimensions using one-way analysis of variance, a procedure which does *not* assume linearity. We have already reported that the relationships with self-esteem are essentially linear, and the same holds true for the other dimensions. We found little in the way of departures from linearity, and in most cases those which did appear were rather small and not readily interpreted.

The advantages of product-moment correlations for an investigation involving a great many variables are simplicity, parsimony, and economy. The product-moment correlation presents in a single statistic a measure of the strength and *direction* of a relationship. By requiring the relationship to be linear, it discounts the "bumpy" or uneven patterns of association which sometimes appear in one-way analyses of variance. A matrix of product-moment correlations also permits all sorts of multiple regression analyses, as illustrated in the chapter on self-esteem. Finally, the product-moment correlation is the only measure of association which could, at a reasonable cost, be computed for nearly 20,000 pair-wise combinations of measures.[1]

Now let us outline the several kinds of substantive questions we will be exploring. We will use the self-esteem data to illustrate four different types of analyses: 1. a comparison of mean scores at different time points; 2. an examination of reliability and stability across time; 3. an examination of correlations between post-high school experiences and outcomes; and 4. multivariate analyses.

1. Overall Shifts in Outcome Scores. The least complicated, and in some respects the most interesting, conclusion drawn from our analysis in the preceding chapter is that young men in general showed substantial increases in self-esteem as they went from age 15 to age 23. For each of the other outcome dimensions we examine, one of the questions we will ask is whether there appears to be any substantial overall shift in mean scores, for this represents one important type of change in the young men we are studying.

2. Stability in Relative Ordering of Scores. A different perspective on change involves asking whether individuals who score highest on a dimension at one point in time are also among the highest scorers at other points in time. For example, although we found a large increase in mean self-esteem scores from Time 1 through Time 5, we also found a good deal of stability in the way respondents' scores were ordered from one year to the next. Indeed, we estimated that stability in self-esteem was almost .9 per year—which means that "true" (i.e., perfectly reliable) self-esteem scores for one year would be correlated .9 with "true" scores a year later.

Actually, it appears that the stability of self-esteem scores increased slightly during the high school years and the period which followed. A more detailed examination of the estimates in the preceding chapter (Table 5-2) indicates that the stability of self-esteem was .74 for the 18-month interval from Time 1 to Time 2, which reflects an annual stability rate of about .82; stability was .88 for the one-year interval from Time 2 to Time 3 and .89 for the one-year interval from Time 3 to Time 4; stability was .69 for the four-year interval from Time 4 to Time 5, reflecting an annual stability rate of .91 (because .91 raised to the fourth power = .69). In sum, our best estimate is that the annual stability rates for self-esteem rose from .81 during most of tenth and eleventh grades, to .88 during the senior year, to .89 during the next year, to .91 during the following four years.

It is important to keep in mind that the stability coefficients presented here are estimates of "true" cross-time correlations after correcting for unreliability in the measures (Heise, 1969). Thus they are always higher than the raw or unadjusted cross-time correlations. For measures with relatively low reliability, the differences between the raw cross-time correlations and the stability estimates are quite substantial.

We have found it useful to compute reliability and stability estimates for all of our outcome dimensions which have been measured at three or more points in time. (These are presented in Appendix F.) As we report our findings for each dimension, we will use the cross-time stability estimates to provide another way of thinking about change.

3. Outcome Scores Linked to Experiences. The most important purpose of our analysis is to explore the relationships between social experiences and outcome dimensions. Each of the social experience dimensions described earlier, except for college major, has been correlated with each outcome dimension. This permitted us to examine the relationships between a given experience and the outcome dimension measured at various points throughout the study. (For those variables not measured at all five data collections, the longitudinal span is less than eight years, but in all cases to be treated here the span covers at least four years.)

Once again, let us use self-esteem to illustrate the analysis approach that we will be following with the other outcome dimensions. We will include a brief review of the linkages with educational and occupational experiences, but will concentrate more attention on other dimensions of experience and their links to self-esteem.

The product-moment correlations between educational attainment and self-esteem show quite clearly the declining importance of education for self-esteem; Time 1 self-esteem correlates .27 with educational attainment whereas Time 5 self-esteem shows a correlation of only .14.[2]

For those who attended college or a university, the measures of institutional quality show a pattern of relationship with the self-esteem measures that fits in nicely with our other findings. The college status ranking correlates .15 with the Time 1 self-esteem measure, but that relationship shrinks to .03 for Time 5 self-esteem. Another indicator of college quality, the college mean score on the ACT test, shows a similar decline—the correlation with self-esteem is .12 for the Time 1 measure but .02 for the Time 5 measure. In other words, *of all who went to college* (all others have missing data for this part of the analysis), those who went to higher status schools had relatively high self-esteem at the start of the study, but by the end of the study their self-esteem scores were no higher than those who went to less prestigious schools. Many respondents, of course, were able to anticipate during their high school years that they would be going to high status institutions, and this anticipation might have contributed to their above-average self-esteem scores during the high school years when factors related to educational success seem to be especially important for self-esteem.

Incidentally, a comparison of students with different college majors showed no meaningful differences in self-esteem when measured at Time 5 or during high school. Later, when we explore some dimensions of social values or political views, we will see that college major is associated with some important differences.

Turning now to an examination of occupational experience, we find that the correlation between status of attained occupation and self-esteem is .16 at Time 5, but occupational status at Time 5 also correlates .15 with self-esteem measured at the start of tenth grade, Time 1. Our extensive analysis in the preceding chapter led us to conclude that this apparent stability in relationship is better interpreted as showing a slight impact of occupational attainment on later self-esteem scores; however, that interpretation became plausible only after we undertook multivariate analyses making adjustments for other prior factors influencing self-esteem. We mention this here as a reminder that in a world of multiple and complexly interrelated causal factors, the examination of only two dimensions, even if one is measured at multiple points in time, has the potential for misleading us. (We will say more about our use of multivariate analyses in the next section.)

The other measure of work experience, employment (at Time 5), shows correlations of .10 with Time 5 self-esteem but .03 with Time 1 self-esteem. This pattern of differences in correlations shows the influence of an experience variable (unemployment) on an outcome dimension (self-esteem at Time 5) which was not anticipated in the earlier measures of the outcome dimension. (Recall that the employment dimension is a dichotomy, with 91.5 percent of the respondents in the labor force indicating that they were employed. Thus, when only 8.5 percent are in the unemployed category, a correlation as small as .10 represents a self-esteem difference of about .4 standard deviation units—an effect that is substantively, as well as statistically, significant.)

When we examine the relationship between military service and self-esteem, we find the same pattern of declining correlations that appeared for a number of other dimensions. At the start of the study, the 25 percent of the sample who would later serve on active duty in the military had slightly lower than average self-esteem scores—the correlation between Time 1 self-esteem and later military service is −.14. But self-esteem at the end of the study shows a correlation of .00 with military service. On first glance, this seems to indicate that the military services were taking young men with lower than average self-esteem and bringing them up to average, consistent with the slogan "the Army builds men."

But a more detailed examination of the trend in correlations rules out such a simple explanation. The decline in relationship between self-esteem and military service is gradual, and begins during the high school years. The −.14 association at Time 1 decreases to −.09 and −.06 when we correlate Time 2 and Time 3 self-esteem with later military service; and by Time 4 (one year after most graduated from high school) self-esteem scores show the same .00 correlation with military service as is true for Time 5. Of course, a few of the young men in our sample had dropped out of high school and entered military service by Time 3, but that number is quite small and could not account for a decrease in correlation from −.14 to −.06.

The shifting linkage between self-esteem and later military service may better be explained in terms of the notions introduced in the preceding chapter, especially the idea that things having to do with educational success and failure become less central to the self-esteem of young men as they move toward the end of high school and beyond. Those who wound up serving in the armed forces were not only slightly below average academically; they were also a bit below average in ability ($r = -.14$) and past scholastic grades ($r = -.21$), they were less likely to be planning for college ($r = -.20$ for college plans at Time 1, $r = -.28$ for Time 3 plans), and more of them had been held back a grade in school ($r = -.28$). Thus, in those areas of academic success and aspiration which we found to be important for early self-esteem, those respondents who would later enter the military were a shade below the mean. It may be that during the high school years many of these young men reached the decision to enter military service (Johnston and Bachman, 1972), and this may have hastened the decline in the importance of academic success as a factor influencing their self-esteem. There may be still other factors which we have not investigated which also would help to account for the pattern of correlations between self-esteem and military service. In any event, it seems clear that we cannot credit the military experience per se as the cause of a relative increase in self-esteem, since the shift took place almost entirely before the young men actually entered the service.

The one other set of experiences that we will be examining from time to time consists of marriage and parenthood. At Time 5 about one-quarter of the young men in our sample were married with one or more children; another quarter were married with no children; and the remaining half were unmarried. Our correlational analysis uses three dichotomous variables to capture the several kinds of relationships which might be involved. One variable simply distinguishes between those who are and are not married. Another distinguishes between parents and all others (married or not). And (for the sake of completeness) a third variable distinguishes married nonparents from all others. Although these variables show no strong relationship with self-esteem, it may be worth noting that those who married and became fathers (within five years after leaving high school) had slightly lower than average self-esteem at the start of the study ($r = -.11$ between self-esteem at Time 1 and parenthood reported at Time 5) but were average in self-esteem at the end of the study ($r = .03$ between parenthood and Time 5 self-esteem). This shift in relationship with self-esteem, similar to the one for those who entered military service, took place largely during high school (the correlations with self-esteem from Times 1 through 5 are, in order, −.11, −.04, −.01, −.02, .03). Since the biggest shift in self-esteem correlations took place from Time 1 to Time 2, and since parenthood in virtually all instances took place *after* Time 2, we cannot say that parenthood directly influenced self-esteem. On the other hand, if we note that those who became parents by Time 5 were below average in academic ability ($r = -.22$), past grades in school ($r = -.19$), and the other measures of academic experience and aspirations that are linked to early self-esteem, then it seems likely that we are dealing with another reflection of the declining centrality of academic success and skill as factors in self-esteem.

4. Outcome Scores Linked to Background and Ability—The Need for Multivariate Analyses. The previous chapter demonstrated rather clearly, we hope, the need to consider a number of other variables before drawing conclusions about the impact of educational, occupational, and other experiences in the years following high school.

Given that background and ability factors are strongly associated with our most important dimensions of post-high school experience—educational and occupational attainment—and given that they are moderately associated with some of the other dimensions of experience, it must be an important part of our examination of any outcome dimension to see whether it is related to the background and ability dimensions, and whether the pattern of such relationships changes over time. When such relationships do appear, as in the case of self-esteem, then it may be necessary to undertake multivariate analyses in order to discover more about the nature of possible causal interconnections. On the other hand, for those outcome dimensions which do not show an association with background and ability, there will be less need for multivariate analyses.

The multivariate analyses presented in the chapter on self-esteem are fairly straightforward regression analyses. They provide a model for us to follow in dealing with some of the other outcome dimensions. They can also serve as a model, or at least a starting point, for anyone interested in pursuing the investigation of a particular outcome dimension further than we have been able to do in this report.[3]

Summary of Analysis Strategy. Most of this chapter has been devoted to an outline and illustration of the analysis approach to be followed in subsequent chapters. Because there were so many measures to cover, we relied heavily on a large matrix of product-moment correlations (plus means and standard deviations). Using this mass of data, our analysis of each criterion dimension proceeded through the following four steps:

1. A comparison of mean scores on the outcome measures at different points in time, thus providing an indication of overall shifts.
2. An examination of reliability and stability estimates, since the latter provide another perspective on change.
3. An examination of correlations between post-high school experiences and the outcome at each point in time for which data are available, since this indicates whether any (zero-order) relationship exists and *may* suggest whether the post-high school experiences play a causal role.
4. An exploration of whether background and ability dimensions are correlated with the outcome (again, at all available time points), since this indicates that these other variables may account for relationships between the outcome dimension and any of the post-high school experiences. Where such correlations with background and ability were found, further multivariate analyses (regression analyses) were often carried out.

We have followed each of these steps in our analysis of self-esteem, and in our examination of the other outcome dimensions treated in the following chapters. In some instances we report the steps in some detail; in other instances we mention them only passingly or not at all. In our necessarily selective coverage we have not knowingly omitted any relationship that is particularly strong, or that is centrally linked to our major conclusions.

Notes

[1] The matrix of product-moment correlations used in this analysis has been published in O'Malley, Bachman, and Johnston, 1977, and is also available from the authors. The matrix includes virtually all of the variables that are treated in this volume (in the order shown in Table 1-2).

[2] Number of years of schooling shows a virtually identical decline, from .25 to .14. (The measure of number of years of schooling was included in our analyses because this is a commonly used dimension in other studies, and also because some may consider it more

appropriate for product-moment correlational analyses. Since it correlates .89 with our eight-category measure of educational attainment, it is clear that the two measures must show highly similar relationships with other measures. When differences appeared, the educational attainment variable generally showed a very slightly stronger relationship than the years of schooling variable.)

[3] Those interested in carrying out regression analyses based on the total sample may wish to obtain a copy of the correlation matrix noted in Footnote 1 and in the Preface.

Chapter 7

MOTIVES, AFFECTIVE STATES, VALUES, AND ATTITUDES

The outcome dimensions explored in the Youth in Transition project have covered a wide range, and have also shifted somewhat during the course of the project. In this chapter we deal with a variety of different outcomes. We begin with a brief look at several motives, affective states, and values dimensions which were measured throughout the first four data collections (from tenth grade to one year after high school). Then we turn to a collection of attitudes about social issues, including some views about government which were measured throughout the project, and also views about several more specific issues measured only during the last four or five years of the project.

Motives, Affective States, and Values

A number of dimensions were included in the first four Youth in Transition data collections but were omitted from the final data collection in order to keep the mail questionnaire from becoming too long. The decision not to repeat these measures was influenced partly by their length, but primarily because they had shown relatively little change during the first four years of the project. We have chosen to include a brief summary of findings for these outcome dimensions, even though they extend to only one year beyond high school, because in several respects they show relationships similar to some of our findings for self-esteem and other variables to be reviewed later.

The following seven dimensions will be considered:

Need for self-development
Need for self-utilization

Happiness
Negative affective states
Somatic symptoms
Social values
Internal control

All are described briefly in the Glossary, and more extended descriptions appear in the first three volumes of the *Youth in Transition* monograph series.[1]

One reason for grouping these variables together is that each is correlated with self-esteem; the range of correlations at Time 1 is from .25 to .57 (absolute values), and the same pattern holds for Times 2, 3, and 4. Additionally, the two motive measures, need for self-development and need for self-utilization, are highly correlated at each point in time (*r*'s above .7). Further, the affective states dimensions are all interrelated—the negative affective states measure correlates about .6 with somatic symptoms and about −.6 with happiness.

Stability and Change. Given their relationships with self-esteem, it is not so surprising to find that each of these dimensions also shows a pattern of cross-time stability similar to that for self-esteem. In each case the annual stability rate is lowest during tenth and eleventh grades, higher during the senior year, and still higher during the year following high school. (The stability estimates are presented in Appendix F.) The conclusion we reached in analyzing the stability of self-esteem would seem to apply here as well: these dimensions of personality show a considerable degree of consistency from one point in time to another; the changes which occur during late adolescence appear to be gradual rather than abrupt.

The mean scores for all of these dimensions also showed rather limited change, on the whole. The need for self-development did not change at all, while the need for self-utilization dropped very slightly (less than 20 percent of a standard deviation) during the year after high school (Time 3 to Time 4). Mean scores for happiness, somatic symptoms, and the social values measure were virtually unchanged during the four-year span. Negative affective states showed a modest decline (about 25 percent of a standard deviation) in mean scores, which occurred gradually from Time 1 through Time 4. The measure of internal control (or personal efficacy, as it is sometimes called) showed a slight increase (about 20 percent of a standard deviation) mostly during the first two years of high school.

Correlations with Educational Attainment. The similarity with self-esteem is again evident when the motives, affective states, and values

TABLE 7-1

Motives, Affective States, and Values Correlated with Educational Attainment

	Product-Moment Correlation between 1974 Educational Attainment and Each Criterion Measured at:			
Criteria	Time 1 (1966)	Time 2 (1968)	Time 3 (1969)	Time 4 (1970)
Need for Self-Development	.28	.24	.24	.15
Need for Self-Utilization	.21	.20	.19	.12
Happiness	.13	.09	.08	.04
Negative Affective States	−.17	−.09	−.12	−.09
Somatic Symptoms	−.25	−.22	−.20	−.20
Social Values	.23	.18	.11	.04
Internal Control	.25	.20	.13	.09
Self-Esteem	.27	.21	.21	.17

dimensions are correlated with educational attainment. Each of the seven outcome dimensions shows a pattern of declining correlations with educational attainment, as displayed in Table 7-1. (For comparison purposes, the table also includes data for self-esteem.)

In particular, the needs for self-development and self-utilization, social values, and internal control show a rather sharp drop in correlations very similar to that shown by self-esteem. These dimensions also show patterns of correlations with family socioeconomic level, academic ability, and classroom grades which are similar to the relationships for self-esteem discussed in Chapter 5. At the start of high school each of these dimensions of personality was linked to factors related to educational success, but by one year after high school the connections were much weaker.

It appears that these dimensions of motives, affective states, and values are to some extent precursors of later educational attainment. It is perhaps unfortunate that we were unable to provide questionnaire space to measure these dimensions at the end of the study; but had we been able to do so, we very likely would have found that they correlated very weakly with educational attainment.

Views about Government: Interest and Trust

Interest in Government. A single item asking the respondent to rate how much interest he took in government and current events was asked in all five data collections. Because this dimension was a single item rather than an index made up of several items, its reliability (estimated at .57) was lower than most of our other measures. Its estimated stability, on the other hand, was quite high—particularly from Time 2 through Time 5 (see Appendix F for the estimates).

TABLE 7-2

Interest in Government Correlated with Selected Other Variables

	Product-Moment Correlations with Interest in Government Measured at:				
Variable	Time 1 (1966)	Time 2 (1968)	Time 3 (1969)	Time 4 (1970)	Time 5 (1974)
Educational Attainment (1974)	.13	.24	.21	.21	.28
College Status Ranking*	.16	.17	.14	.14	.16
College Mean ACT Score*	.11	.13	.14	.12	.17
Ability Composite (1966)	.09	.22	.15	.20	.24
Average Grade: 9th Grade	.16	.21	.17	.16	.20
Average Grade: 10th Grade	.18	.23	.20	.20	.17
Average Grade: 12th Grade	.14	.22	.24	.21	.20
Socioeconomic Level (1966)	.10	.14	.15	.16	.19
Status of Occupation (1974)	.07	.15	.10	.06	.17

*The college status ranking and the college mean ACT score measures are available only for the subset which named a college or university they attended after high school. The others (nearly half of the total sample) have missing data and are thus omitted from the correlations involving these two variables.

At Time 5, about half of the respondents reported "a very great interest" or "a lot of interest" in government and current events, while the other half claimed "some interest" or "very little interest" or "no interest at all." The mean interest scores rose by about one-third of a standard deviation between Times 1 and 4, then dropped again between Times 4 and 5.

An examination of correlations reveals that interest in government is positively linked to academic ability and eventual educational attainment. Table 7-2 presents the relationships across all five points in time.

Note that interest in government measured at Time 5 showed consistently stronger correlations with academic ability and attainment measures than did government interest measured at Time 1. That would be consistent with the explanation that higher education arouses greater interest in government. The problem with that interpretation is that government interest at Time 2 (the end of eleventh grade) showed correlations almost as strong as those for the Time 5 measure. We are frankly at a loss for a satisfactory explanation for this pattern. It happens that 1968 was a presidential election year; perhaps that forthcoming event aroused the interest of some college-bound students, which would also account for the slight rise in mean interest scores between Time 1 (Fall 1966) and Time 2 (Spring 1968). In any event, it appears that interest in government is related to educational attainment and even to the quality of the institution attended (as the second and third rows of the table indicate); however, much of that relationship was evident by the end of eleventh grade.

To what extent did educational attainment make a separate contribution to interest in government? We explored that question using regression analyses. When the Time 5 measure of interest in government was predicted by educational attainment along with background, ability, and Time 1 through 3 measures of interest in government, the standardized regression coefficient (beta) for educational attainment was .13. When occupational status was included among those predictors, it had a trivial beta value of .04 while the beta value for educational attainment was .12. The beta value of .12 is a good deal lower than the zero-order correlation of .28 between educational attainment and interest in government (at Time 5); nevertheless, it does suggest a slight positive impact of educational attainment. We can describe the relationship by saying that the more able students who were headed toward college were likely to show higher than average government interest during high school, and after college the effect was a bit stronger.

Trust in Government. The most dramatic finding for our measure of trust in government was a drop of more than a full standard deviation from Time 1 (1966) through Time 5 (1974). Similar questions asked of adult cross-sections during the same period showed an equally large erosion of confidence in government (Miller, 1974; Miller, Brown, and Raine, 1973).

The decline in trust is quite pervasive, showing only small differences between those who went to college and those who did not. At the start of the study, trust in government was slightly greater among those who were headed for higher education (the correlation between trust at Time 1 and later educational attainment is .13), but at the end of the study there were no differences in government trust associated with education ($r = -.03$). Thus the better educated showed a bit larger drop in trust, thereby "catching up" with their age-mates.

There were some differences in government trust at Time 5 which related to major program of study in college. Those who had majored in biological sciences, social sciences, or humanities and arts, showed slightly lower than average trust in government (about 20 percent of a standard deviation lower). Those who majored in the physical sciences or mathematics were about average. Those in engineering were very slightly higher than average in government trust; those with business majors were a bit higher; and those who had majored in education showed the highest levels of trust (over 30 percent of a standard deviation above average). These differences linked to college program were only partially forecasted by differences at Time 3 (the end of high school); at that time those who were to major in humanities and arts were a bit more critical of government than the average (about 20 percent of a standard deviation), while those headed toward business or education majors were very slightly more trusting than average (about 15 percent of a standard deviation).

One other slight difference in the rate of declining government trust appears when we contrast those who did and did not serve in the armed forces. At the start of the study, those who would later serve had very slightly lower trust ($r = -.05$), but at the end of the study the difference in trust was reversed ($r = .09$). Those who served in the military showed a distinct drop in government trust, but it was not quite as sharp a drop as occurred for their nonmilitary age-mates (see Bachman and Jennings, 1975, for an extended treatment of these and related findings).

Views about Vietnam Policy and Military Influence

Much of the decline in government trust can be traced to dissatisfaction with U.S. policy in Vietnam (Bachman and Jennings, 1975; Bachman and vanDuinen, 1971; Miller, 1974).In this section we examine a six-item index which we have termed Vietnam dissent. The six items asked respondents' views about whether the war had been damaging to U.S. honor or pride; was not in the national interest; or was necessary in order to fight Communism, protect friendly countries, and show that the United States keeps promises.) We also examine a two-item index dealing with preference for military influence. One item asked respondents to rate military spending and the other item asked them to rate the influence of military personnel over the way the country is run in both cases using a five-point scale ranging from "far too much" (scored 1) through "about right" (scored 3) to "far too little" (scored 5). (A high score, indicating that there is too little military spending and influence, is interpreted as indicating a preference for greater military influence.)

Dissatisfaction with Vietnam policy increased substantially from Time 3 (1969) to Time 5 (1974), a shift of about one-half of a standard deviation. During the same period, the shift in preference for military influence was much smaller—preference ratings dropped by just over one-tenth of a standard deviation. At both time periods most respondents rated military spending and influence as being either "about right" or "too much."

Relationships with Educational Experiences. At the end of the study, those who went to college were more critical of Vietnam policy and less supportive of military influence than were those who did not go to college. At the end of high school (Time 3), views about military influence differed and, in a sense, anticipated the effects of higher education. These relationships grew substantially stronger during the five years following high school. Table 7-3 shows how educational attainment and

TABLE 7-3

Views about Vietnam and Military Influence Correlated with Selected Other Variables

	Product-Moment Correlations:				
	Vietnam Dissent Measured at:			Preference for More Military Influence Measured at:	
Variable	Time 3 (1969)	Time 4 (1970)	Time 5 (1974)	Time 3 (1969)	Time 5 (1974)
Educational Attainment (1974)	.07	.21	.26	−.19	−.32
College Status Ranking*	.08	.18	.20	−.15	−.21
College Mean ACT Score*	.12	.24	.23	−.19	−.22
Ability Composite (1966)	.05	.18	.27	−.17	−.34
Socioeconomic Level (1966)	.08	.23	.23	−.17	−.28
Status of Occupation (1974)	.03	.09	.10	−.07	−.13
Military Service (by 1974)	−.13	−.20	−.11	.14	.26

*Correlations are based on only those who attended a college or university.

a number of other variables correlated with Vietnam dissent and preference for more military influence at each of the times these two dimensions were measured.

Several observations arise from a comparison among the correlations in Table 7-3:

1. Most of the shift in Vietnam dissent correlations occurred during the first year following high school. The correlations for the Time 4 measure are nearly as high as those for the Time 5 measure, and both are a good deal higher than the correlations for Time 3 Vietnam dissent.

2. The correlations with Time 5 views about military influence are similar to those for Time 5 Vietnam dissent (except that the sign of the correlation is reversed in each case); however, in most instances the relationship is a bit stronger for preferences about military influence.

3. There are larger differences in strength of relationship when we contrast Time 3 Vietnam dissent with Time 3 views about influence. The preference for more military influence measured at the end of high school shows some noticeable differences between those who were headed toward college and those who were not.

To the above observations we can add another which is not based on the table, but which fits in with what we have already seen. The correlation between Vietnam dissent and preference for more military influence is −.41 at Time 3 and −.53 at Time 5. The stronger relationship between the two variables at Time 5 is consistent with the fact that they show more similar (albeit reversed) patterns of correlations with other variables at Time 5.

How shall we interpret these differential shifts in correlation from Time 3 to Time 5? One fairly plausible interpretation is that views about military influence were more basic or fundamental than dissatisfactions with the war in Vietnam; therefore, the views about influence related to background, ability, and college orientation earlier and more strongly than did Vietnam dissent—particularly since many people's views about Vietnam underwent substantial change between mid-1969 and mid-1970.

To what extent were military views at Time 5 merely reflections of earlier differences in background and ability, rather than effects of educational attainment? We explored this question using multiple regression analyses in which educational attainment, along with background, ability, and earlier (Time 3) Vietnam dissent were used to predict later (Time 5) Vietnam dissent. The standardized regression coefficient (beta) for educational attainment was .12, indicating a modest direct contribution to Vietnam dissent. A similar analysis carried out for the preference for more military influence produced similar results—a beta value of −.13 for educational attainment.

It is of interest to note that the quality of the college or university attended also seemed to bear a relationship to views about Vietnam and the military. Those who went to institutions with higher status and ones with higher mean student test scores also tended to be more dissenting about Vietnam policy and less favorable toward military influence; the latter effect was nearly as strong prior to college entrance (Time 3) as it was five years later (Time 5).

Major area of study also showed a relationship with military and Vietnam views. At the end of high school, those who later majored in humanities or the arts were above average in their criticism of Vietnam and military influence, whereas those who majored in engineering, business, or education were all a bit less critical than the average student headed for college. Five years later (in 1974), the engineering, business, and education majors had, like most others, become more critical of Vietnam policy but they still were not as dissatisfied as the average respondent who went to college. By 1974, those most critical of Vietnam policy were the social science majors, followed by the physical science and mathematics majors, and then by the biological science and humanities and arts majors. The findings for 1974 views about military influence are similar, with one very interesting exception. Those who majored in physical sciences or mathematics showed no mean shift at all in their preferences for military influence; thus, from a position slightly below the mean for those headed toward college in 1969, they moved to a position slightly above the mean in 1974.

We see, then, a considerable contrast between the social science majors and the physical science or mathematics majors. Both groups showed a large (about one standard deviation) increase in Vietnam dissent. But while the social science majors also showed a larger drop in preference for military influence than any other group (about half a standard deviation), the physical science and math majors showed no drop at all. There is some temptation to speculate about the reasons for the differences between these groups, but that would carry us too far afield. It is sufficient to note that here, as well as in the other comparisons noted above, we see some differences in patterns of change which suggest that educational experiences have made an impact on at least one area of values and attitudes.

Relationships with Other Experiences. The bottom row in Table 7-3 shows correlations between military service experience and views about Vietnam and military influence. Those who later served in the armed forces were slightly less critical of Vietnam policy in 1969, just before most of them graduated from high school. One year later the difference between those who did and did not serve had grown larger; but four years beyond that (1974) the difference had diminished somewhat. Differences in views about military influence, on the other hand, remained fairly substantial at the end of the study; those who served in the armed forces preferred more military influence than those who had not (r = .26). Although those who served already showed some tendency to be more favorable to the military before they actually entered, it appears that their military experience had some further impact on their views about how much military influence is desirable in the United States.[2]

Another dimension of post-high school experience which showed a small relationship with views about Vietnam and military influence was occupational status in 1974. The relationship, however, is much weaker than the relationship between military influence and educational attainment. When educational attainment and occupational status were entered together into multiple regression equations, along with background and ability and Time 3 Vietnam dissent, the beta value for occupational status predicting Time 5 Vietnam dissent was a trivial −.03. The comparable analysis predicting Time 5 preference for more military influence produced the same result (beta = .01).

Views about Other Social Issues

Population and Family Planning Issues. A series of questions asked in the last two data collections dealt with concern about population problems, personal preference for children, and views about abortion. These measures showed relatively little change in mean scores between 1970 and 1974. The index of population concern showed no shift at all.

TABLE 7-4

Views about Population and Family Planning Issues Correlated with Selected Other Variables

	Population Concern		Ideal Number of Children		Disapproval of Abortion	
Variable	Time 4 (1970)	Time 5 (1974)	Time 4 (1970)	Time 5 (1974)	Time 4 (1970)	Time 5 (1974)
Educational Attainment (1974)	.29	.23	−.05	−.06	−.25	−.21
College Status Ranking*	.11	.13	−.05	−.08	−.14	−.14
College Mean ACT Score*	.10	.14	−.04	−.06	−.14	−.14
Ability Composite (1966)	.34	.30	−.08	−.15	−.27	−.24
Socioeconomic Level (1966)	.23	.18	−.07	−.07	−.23	−.20
Number of Siblings (1966)	−.24	−.21	.16	.18	.14	.19
Status of Occupation (1974)	.07	.09	−.02	−.01	−.08	−.05
Married and a Parent (by 1974)	−.16	−.10	−.06	.03	.09	.16

*Correlations are based on only those who attended a college or university.

The preferred number of children dropped from a mean of 2.81 to a mean of 2.48—a shift of about one-quarter of a standard deviation. Responses to this statement, "A woman should be permitted to have an abortion at any time during the first three months of pregnancy," went from a mean of 2.11 to 2.02 on a four-point scale of agreement, with a score of 2 indicating "mostly agree."

As the correlations in Table 7-4 indicate, views about population and abortion showed some relationship to educational attainment. They also were related to family socioeconomic level, ability, and measures of college quality. None of these relationships with background, ability, and educational experience changed very much from 1970 (one year after high school) to 1974 (five years after high school). If higher education played a central role in influencing views in this area, it must have had its impact during the first year after high school. More likely, some individuals—especially those with higher ability, higher family socioeconomic backgrounds, and greater interests in education—are more disposed to be aware of, and express concern about, emerging social issues. By 1970 the concern about population problems had already reached a broad cross-section of the public; indeed, after 1970 there was probably no overall increase (and perhaps even some decrease) in public awareness of population growth as a danger.

We noted that a number of factors related to population concern and views about abortion; however, these same factors showed little association with the actual number of children a respondent desired. A stronger predictor of preferred number of children was the respondent's own family size: the more brothers and sisters a young man had, the more children of his own he was likely to prefer. Preferred number of children also showed a rather strong relationship with population concern, as one might expect. The greater the concern about population problems, the lower the preferred number of children ($r = -.33$ in 1970, $r = -.42$ in 1974).

Two other relationships in Table 7-4 bear mention. First, we found a certain consistency in population views linked to the respondents' own number of siblings; in addition to their slightly above-average preference for children, those from larger families also showed greater than average disapproval of abortion and lower than average concern about population problems. Additionally, the respondents' own parental status showed a slight negative correlation with population concern and a positive connection with abortion disapproval. (Incidentally, these relationships reflected parenthood, specifically, not marriage in general. Married respondents without children were not at all different along these dimensions from those who were unmarried.)

Racial Attitudes.[3] Three scales of racial attitudes were used at Times 3, 4, and 5; one dealt with whether the government should take a strong role to insure equal treatment for all races, another dealt with social distance between the races, and a third dealt with perceptions of discrimination against blacks. The items, shown in Table 7-5, all were adapted from the work of Campbell and Schuman (1968). Although the items were worded in such a way that they could be answered by members of any racial group, we considered it most useful to limit our analysis in this section to white respondents. Thus we are dealing here with the attitudes of young white men toward blacks.

The response distributions for each of the items are presented in Table 7-5. It will be useful to begin our discussion by considering the changes in responses from 1969 (the end of high school) to 1974. The three questions about government action to end discrimination all showed some shift in opinion from 1969 to 1974. By 1974 only 8 percent disagreed with the statement that the government should insure that blacks and whites be allowed to attend the same schools if they want to, and only 3 percent disagreed with the statement that government should insure equal treatment in jobs. On the other hand, 21 percent agreed or agreed mostly that "It is not the government's business to pass laws about equal treatment for races." It may be that some of the 21 percent reflects agreement bias. In particular, it may be that some people will readily agree with almost any statement saying "it is not the government's business . . . ." In other words, some may provide an apparently discriminatory response, not because they object to equal treatment, but rather because they object to government action as the means for ac-

TABLE 7-5

Responses to Racial Attitude Items (Whites Only)

Item	Percentage of Responses at:		
	Time 3 (1969)	Time 4 (1970)	Time 5 (1974)
Government Should End Discrimination			
"The government in Washington should see to it that white and black children are allowed to go to the same schools if they want to."			
Agree	60	63	68
Agree mostly	28	29	24
Disagree mostly	8	6	4
Disagree	4	3	4
"The government in Washington should see to it that people are treated fairly and equally in jobs, no matter what their race may be."			
Agree	62	70	81
Agree mostly	31	26	16
Disagree mostly	5	3	2
Disagree	2	1	1
"It is not the government's business to pass laws about equal treatment for all races."			
Agree	14	12	11
Agree mostly	17	16	10
Disagree mostly	27	28	24
Disgree	41	44	56
Social Distance Between Races			
"Suppose you had a job where your supervisor was a qualified person of a different race (white, black). Would you mind that a lot, a little, or not at all?"			
A lot	5	4	2
A little	25	20	13
Not at all	70	76	85
"If a family of a different race (but same level of education and income) moved next door to you, how would you feel about it?"			
I'd mind it a lot	8	7	4
I'd mind it a little	30	24	21
I wouldn't mind it at all	62	69	75
"If you have small children now or later on, would you rather they had only white friends, only black friends, or both?"			
I'd like them to have only white friends	17	13	8
I'd like them to have only black friends	3	2	0
I'd like them to have both black and white friends	81	84	91

TABLE 7-5—*Continued*

Item	Percentage of Responses at: Time 3 (1969)	Time 4 (1970)	Time 5 (1974)
Perceived Racial Discrimination			
"Do you think many blacks miss out on jobs and promotions because of racial discrimination?"			
Many	39	39	24
Some	43	44	47
Only a few	15	14	22
None at all	4	4	7
"Do you think that many blacks miss out on good housing because white owners will not rent or sell to them?"			
Many	41	40	28
Some	41	44	49
Only a few	14	13	18
None at all	3	2	4
"Do you think that many blacks miss out on good schooling because of racial discrimination?"			
Many	27	30	18
Some	43	42	37
Only a few	20	20	29
None at all	10	8	15

complishing it. Thus the measure of support for government action, while a very relevant dimension, is not an uncontaminated indicator of racial views.

Perhaps a simpler and more direct measure of individual attitudes is the social distance dimension, since it deals (hypothetically) with the respondent's own supervisor, neighborhood, and children. Here the shifts from 1969 to 1974 were quite substantial; for each item the proportion expressing some racial bias dropped by one-half. The proportion saying they would not mind at all having a supervisor of a different race increased from 70 percent to 85 percent; those not minding a family of a different race moving next door increased from 62 percent to 75 percent; and those preferring that their children have both black and white friends increased from 81 percent to 91 percent. We do not want to minimize the fact that 9 to 25 percent, depending on the item, still fell short of responses that would indicate complete acceptance of blacks; nevertheless, we take some encouragement from the size and direction of the changes described above.

A more complicated dimension, in many respects, is perceived discrimination against blacks. As the responses in Table 7-5 indicate, most of our respondents from 1969 through 1974 felt that at least some blacks were discriminated against in jobs, housing, and schooling. But from 1970 to 1974 there was a distinct downward trend in perceptions of discrimination against blacks. Perhaps this reflects an awareness of affirmative action programs; possibly the respondents generalized from their own shifts in racial attitudes and the changes that were evident among their peers. For whatever reasons, the perceptions of discrimination dropped.

Now let us turn to the relationship between racial attitudes and post-high school experiences, particularly educational experiences. One of our reasons for adding the racial attitude measures to the Youth in Transition study was to explore the following relationship reported by Campbell and Schuman:

> Among [white] people over 40 years of age, those with higher levels of education are no more or less likely to support an open housing law or to express lack of concern at having a Negro family next door than people of lower educational attainment. The picture is quite different among people age 20 through 39. Here we see that the attitudes expressed by young people whose formal education has not gone beyond high school do not differ from older people of similar educational level. But those who have gone on to college differ substantially both from less educated people of their own generation and from college-educated people of the older generation. More of them believe that there should be a law guaranteeing open housing and more of them say they are not at all disturbed at the prospect of a Negro neighbor (1968, p. 35).

Two alternative explanations for the relationship can be distinguished. One explanation is that college is somehow producing the change in racial attitudes. Campbell and Schuman present that interpretation in the following terms:

> Since World War II those white students who have gone on to college have evidently been exposed to influences which have moved their attitudes away from the traditional pattern in the directions we have observed. We cannot say whether this resulted from specific instruction regarding questions of race or from a general atmosphere of opinion in the college community, but it is clear that a sizeable proportion of these postwar generation college students were affected. In contrast, the high schools which our respondents attended during the postwar years seem to have been little more involved in the nation's racial problems than they were in the prewar period (1968, p. 35).

The alternative explanation for the more liberal racial attitudes among the college educated can be stated this way: those individuals who are less discriminatory and more supportive of civil rights are also more likely to go to college. To state the same explanation as a testable proposition: college-bound individuals will show different racial attitudes before they actually enter college.

The cross-sectional survey design used by Campbell and Schuman, and the other cross-sectional studies reported by Campbell (1971), do

TABLE 7-6

Racial Attitudes Correlated with Selected Other Variables (Whites Only)

	Product-Moment Correlations								
	Government Should End Discrimination			Social Distance between Races			Perceived Racial Discrimination		
Variable	Time 3 (1969)	Time 4 (1970)	Time 5 (1974)	Time 3 (1969)	Time 4 (1970)	Time 5 (1974)	Time 3 (1969)	Time 4 (1970)	Time 5 (1974)
Educational Attainment (1974)	.18	.15	.09	−.13	−.17	−.14	.09	.22	.23
College Status Ranking*	.09	.13	.05	−.07	−.13	−.08	.08	.19	.21
College Mean ACT Score*	.12	.14	.00	−.11	−.15	−.10	.12	.20	.20
Ability Composite (1966)	.27	.26	.13	−.22	−.28	−.17	.19	.30	.29
Socioeconomic Level (1966)	.15	.14	.02	−.15	−.19	−.11	.16	.21	.26
Status of Occupation (1974)	.16	.10	.03	−.09	−.07	−.04	.03	.09	.07
Military Service (by 1974)	−.03	−.03	−.01	.01	−.02	−.02	.01	−.06	−.07

*Correlations are based on only those who attended a college or university.

not permit a comparison of these alternative explanations, but the present study does. We can compare racial attitudes measured in 1969 (the end of high school), 1970 (the first year of college for many), and 1974 (after nearly all had completed their educations). For each point in time we can ask whether those who eventually obtained a good deal of education were different in racial attitudes from those who obtained less. In particular, we can ascertain whether any differences in racial attitudes were in evidence by 1969, prior to entrance into college.

Table 7-6 presents the necessary data. As the first row of the table indicates, each of the racial attitude dimensions measured in 1969 was somewhat correlated with later educational attainments. For the measure dealing with government action to end discrimination, the relationship with educational attainment actually grew weaker after college. The rather modest relationship for social distance fluctuated slightly, but showed no stronger link with education after the fact (in 1974) than prior (in 1969). Perceived discrimination came closest to showing an impact of higher education—those bound for further education perceived slightly more discrimination in 1969 than their age-mates (r = .09), but the relationship was distinctly stronger in 1970 (r = .22), and it remained so in 1974 (r = .23). Also, those who attended higher status institutions were more likely than average to perceive high levels of discrimination (r = .21 for the 1974 measure).

Several other points may be made rather quickly from the data in Table 7-6:

1. Overall, the relationships between racial attitudes and educational attainment were not very strong.

2. The relationships with academic ability, measured in 1966, were consistently stronger than those for later educational attainment.

3. Family socioeconomic level was also related to racial attitudes, often just as strongly as is educational attainment.

These three findings cast further doubt upon the notion that college experiences played a key role in shaping the racial attitudes of this cohort of young men.

4. Occupational attainments, as reflected in the status measure, showed little or no relationship to racial attitudes.

5. Military experience also showed virtually no association with these measures of racial attitudes.

How shall we interpret the findings summarized above? It may be helpful to place them in the context of other recent studies of racial attitudes and other studies of youth values. Campbell's (1971) analysis of white attitudes toward blacks during 1964 through 1970 led him to conclude that there was an overall shift in a positive direction, and that this shift was not limited to particular educational subgroups. More recent surveys which extend these findings through 1974 simply reinforce Campbell's earlier conclusion that across a variety of different subgroupings of whites the trend in attitudes toward blacks has consistently been one of gradual movement in a more positive direction.[4] This suggests that our own finding of a shift in young men's racial attitudes may be largely a reflection of the national trend, rather than a result of any particular set of experiences occurring in the first few years after high school.

What about the lack of clear and consistent evidence of the effects of college on racial attitudes? Yankelovich (1971) and others have suggested that some college students are "forerunners," i.e., individuals who hold social values which will eventually be diffused throughout the larger society. His more recent work, based on a comparison of youth surveys (cross-sections) conducted in 1969 and 1973, led to the conclusion that "Perhaps the single most striking finding of the study is the extent to which the gap between college and noncollege youth has closed . . . "(1974, p. 23). This suggests that our own lack of distinct evidence for a college impact on racial attitudes may be a result of an overall convergence in values between college and noncollege youth. If nothing else, the shift in attitudes has approached the limits of two of the racial attitude scales used in our study, thus making a greater similarity between college and noncollege responses almost a necessity.

Returning now to Campbell and Schuman's discussion of differences in racial attitudes linked to the college experience, we can offer the following summary and interpretation of our own findings: There are modest differences in racial attitudes between those whites in the high school class of 1969 who went to college and those who did not; however, these differences were to some extent evident by the end of high school, before any socializing effect of college could have taken place. That these differences were not larger, and that they were evident to some extent prior to college entrance, may indicate that in the area of racial attitudes the college educated are now less clearly the "forerunners." Perhaps the seventies represent a "post-forerunner" stage in which (a) the brighter and more able students show more positive racial attitudes before they leave high school, and (b) the gap in attitudes between educational groups is growing smaller.

Notes

[1] We decided not to include the measure of impulse to aggression among the affective states discussed here because a change in wording between Time 1 and Time 2 makes the pattern of correlations across time difficult to interpret. (See *Youth in Transition*, Vol.III, p. 116 for details on the change in wording.)

[2] For an extended discussion about the ways that views on military influence are linked to actual service in the armed forces, see Bachman and Blair (1975a, 1975b) or Bachman, Blair, and Segal (1977).

[3] In this section we borrow heavily from an earlier report on the 1969 and 1970 data (Bachman and vanDuinen, 1971).

[4] Based on personal communication from A. Campbell.

Chapter 8

JOB ATTITUDES AND ASPIRATIONS

Among the most important decisions to be faced by young men in high school and in the years beyond is the kind of work they will be doing for much of their lifetime. This is really a set of interrelated decisions made and revised over a number of years. It is a difficult process for social scientists to conceptualize, and perhaps even more difficult to measure in surveys. Nonetheless, this area has been of central importance throughout the Youth in Transition project, and thus we have made some attempts to measure job attitudes and occupational aspirations. At each of the five data collections respondents were asked what sort of work they expected to be doing for a living. They also were asked to rate the importance of a number of different job characteristics. The answers to these questions have shown some very interesting patterns of both change and consistency. In this chapter we examine these patterns and their relationship to post-high school experiences.

Occupational Aspirations

The answers to the question "What sort of work do you think you might do for a living?" were coded and converted to the Duncan socioeconomic status index (Duncan,1961). At the start of tenth grade, aspirations were quite high—a mean Duncan scale value of 62. Five years after high school, scores had declined only modestly to a mean value of 55. This remains a very high average level of occupational aspiration; by way of contrast, the fathers of these young men (as of 1966) had occupations with a mean Duncan status level of 39.

Some of the decline in occupational aspirations from age 15 to age 23 can be linked to changes in educational aspirations. We noted in Chapter 5 (see Figure 5-2) that tenth graders who planned to go to college, but who did not actually do so, showed a substantial drop in the status of their aspired occupations. Given the strong link that exists between actual educational and occupational attainments, this drop in occupational aims would seem to be a realistic adjustment to a change in the level of education to be attained.

Although there were some important shifts in occupational aspirations, such as the one noted above, the overall pattern showed relatively great stability. Individuals may have shifted their preferences from one occupation to another, but the new occupation tended to be similar in *status* to the one preferred earlier. The estimated levels of stability (and also reliability) for the job status measure were substantially higher than those for the dimensions considered in the preceding chapter. The estimated *annual* reliability was above .9 during the high school years; it dropped slightly below that during the first year after high school; then it averaged about .95 during the next four years (see Appendix F). We conclude that the level of occupational aspiration, as reflected in the Duncan status measure, shows a good deal of consistency by the time a young man reaches high school.

The pattern of stability in occupational aspirations extends to include its relationships with background and ability dimensions. As Table 8-1 indicates, family socioeconomic level was a strong predictor of aspired occupation during tenth grade ($r = .37$), and its relationship with occupational aspirations five years after high school remained equally strong ($r = .34$). Academic ability also showed a strong and consistent pattern of correlation with occupational aspirations ($r = .45$ with aspirations at Time 1, $r = .41$ with aspirations at Time 5).

Relationships with Post-High School Experiences. The first row of correlations in Table 8-1 indicates that occupational aspirations are very strongly associated with educational attainment. The relationship is also shown in Figure 8-1. Particularly interesting is the very small change in the relationship over time: occupational aspirations at the end of high school (Time 3) showed just as strong a correlation with later educational attainment as did occupational aspirations five years after high school ($r = .56$ in both instances.) During the five years after high school, there was virtually no change in mean aspirations for those in the highest and lowest categories of educational attainment; the middle categories, those with some college or a bachelor's degree, showed a slight drop in mean aspirations.

For those who went to college, there was also a positive relationship between the status of the college and status of aspired occupation. Here

TABLE 8-1

Status of Aspired Occupation Correlated with Selected Other Variables

Variable	Product-Moment Correlation with Status of Aspired Occupation				
	Time 1 (1966)	Time 2 (1968)	Time 3 (1969)	Time 4 (1970)	Time 5 (1974)
Educational Attainment (1974)	.47	.53	.56	.59	.56
College Status Ranking[a]	.29	.38	.34	.32	.31
College Mean ACT Score[a]	.26	.28	.29	.26	.30
Ability Composite (1966)	.45	.45	.48	.45	.41
Socioeconomic Level (1966)	.37	.34	.36	.38	.34
Status of Occupation (1974)	.26	.28	.30	.31	.45
Employment (as of 1974)	.02	.04	−.01	.00	.00
Military Service (by 1974)	−.14	−.20	−.19	−.15	−.16
Married (as of 1974)	−.15	−.18	−.17	−.22	−.17
Married and a Parent (1974)	−.18	−.24	−.24	−.30	−.19

[a] Correlations are based on only those who attended a college or university.

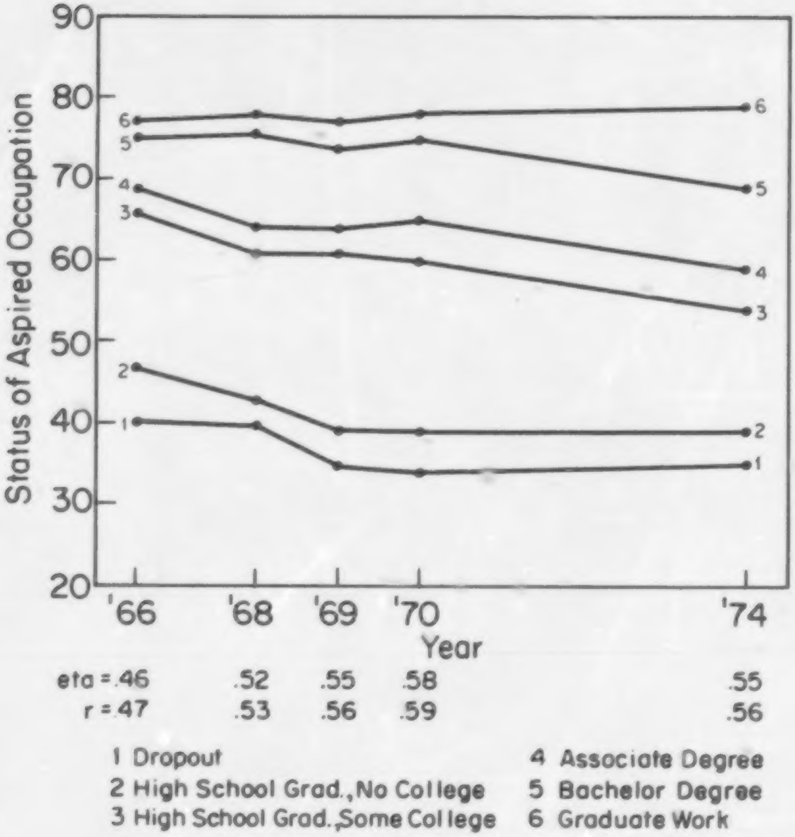
again the pattern of correlations across time showed little in the way of change; the college status rankings and college mean ACT scores related just about as strongly to occupational aspirations in tenth grade as they related to aspirations about eight years later. It appears that those who planned to, and did, attend higher status institutions had high occupational aspirations throughout high school as well as during the years which follow.

Given the findings in the preceding paragraphs, shall we conclude that the relationship between educational attainment and occupational aspirations at the end of the study is only a reflection of differences which already existed in high school? We think such a conclusion would not be entirely accurate. Some changes in aspirations did occur between ages 15 and 23. And while plans for college at Time 1 correlated .59 with occupational aspirations at that time, the correlation between Time 1 college plans and Time 5 status of aspired occupation was only .37. The fact that the differences shown in Figure 8-1 remained consistent throughout the study indicates that actual educational attainment played some role in *maintaining* high occupational aspirations. This conclusion is supported by the results of a multiple regression analysis in which Time 5 occupational aspirations were predicted from background, ability, earlier occupational aspirations (Times 1, 2, and 3), and educational attainment. The standardized regression coefficient for educational attainment was a very substantial .33, indicating that it made an important direct contribution to aspirations at Time 5.

Turning next to relationships with actual occupational attainments,

FIGURE 8-1

Status of Aspired Occupation Related to Educational Attainment

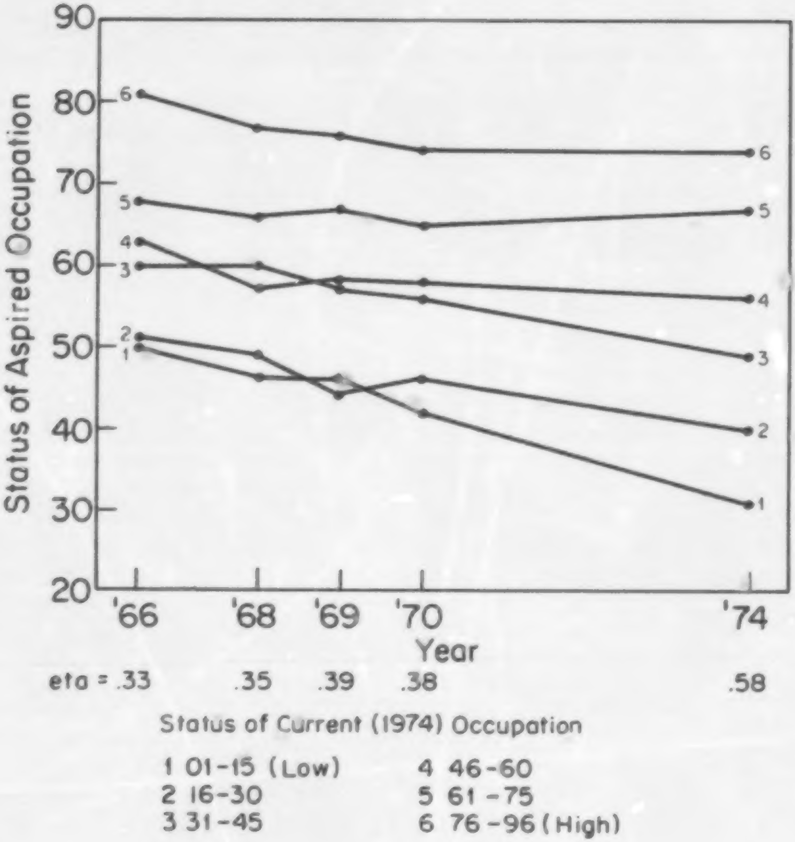


NOTE: The data underlying this figure can be found in Appendix E, Table E-8-1.

we see that those who had higher occupational aspirations during the high school years did indeed attain higher status occupations five years after high school (correlations range from .26 for tenth-grade aspirations to .30 for twelfth-grade aspirations). But it appears that there is a substantially stronger relationship between attainments and aspirations five years after high school—the correlation is .45.

FIGURE 8-2.

Status of Aspired Occupation Related to Occupational Attainment



NOTE: The data underlying this figure can be found in Appendix E, Table E-8-2.

Figure 8-2 shows the relationship strengthening across time. The increased value of the correlation results from the fact that those individuals in lower status jobs (01-45) as of 1974 showed a stronger decline across time in the average status of their aspired occupations. Those in the higher status jobs (61 or over) showed rather little decline. (The data shown in Figure 8-2 are restricted to those who had been in the civilian work force for more than a few months. This is the primary reason that the eta values in Figure 8-2 are higher than the corresponding product-moment correlations in Table 8-1.)

This pattern of findings linking job aspirations to job attainment would seem to be a relatively clear and straightforward instance of an effect of post-high school experience: those who had attained the highest status jobs at Time 5 showed little change in occupational aspirations, whereas those with the lowest actual job attainments showed a downward adjustment in their aspirations. A multiple regression analysis in which Time 5 occupational aspirations were predicted from background, ability, earlier occupational aspirations, and Time 5 occupational status is consistent with this interpretation; the standardized regression coefficient for Time 5 occupational status is .29.

Another multiple regression analysis was carried out in which Time 5 occupational aspirations were predicted from *both* educational attainment and occupational status at Time 5, with other predictors including background, ability, and earlier occupational aspirations. The standardized regression coefficients were .24 for Time 5 occupational status and .25 for educational attainment. This suggests that each of these post-high school experiences played a substantial role in shaping occupational aspirations five years after high school. This is not the only possible interpretation of these findings, as we discuss at the end of this chapter.

Employment versus unemployment showed no correlation with occupational aspirations (see Table 8-1). If being unemployed tended to lower occupational aims, our data provided no evidence of it for young men in their early twenties.

There was a slight negative association between military service and occupational aspirations; however, the pattern does not suggest any particular impact as a result of being in the service. Instead, we see that those who later entered the service showed slightly lower occupational aspirations during their high school years as well as during the five years following high school. In part, at least, the lower aspirations of those who entered military service may be a reflection of their slightly lower than average family socioeconomic level ($r = -.18$), academic ability ($r = -.14$), school grades ($r = -.21, -.20, -.19$), and college plans ($r = -.20, -.23, -.28$).

One other dimension of experience which we found to be correlated with occupational attainment was marital and parental status. As Figure 8-3 indicates, a rather small (five Duncan status points) but quite consistent difference existed between the mean occupational aspirations of respondents who were not yet married by Time 5 (about age 23) and those who were married but did not have children. Those who had children by

Time 5 showed distinctly lower occupational aspirations. The differences in aspirations were about as large at the start of the study as at the end, but at Time 4 (one year after high school) the differences were slightly larger. Both the unmarried respondents, and those who were married but had no children, showed a fairly steady downward shift in aspirations throughout the study. Those who were parents by Time 5, on the other hand, showed a steeper drop in aspirations throughout the first years of data collection, followed by a very slight rise in aspirations from Time 4 to Time 5. It is possible that a more extended analysis of the data from these young men who were parents might show some relationship between the date of the first child's birth and the shifts in aspirations, but such an analysis goes beyond the scope of the present report. It is sufficient here to note that along this dimension of post-high school experience, as we found for military service, there were differences in family background, ability, school performance, and college plans which were evident from the start of the study. Thus the differences in occupational aspirations among the three sub-groups shown in Figure 8-3 may to some degree be traceable to these other differences rather than to any direct impact of marriage and parenthood.

Job Attitudes

A series of questionnaire items administered at all five data collections was designed to assess respondents' attitudes toward different aspects of a preferred or *ideal* job. (In Chapter 4 we explored these same dimensions as characteristics of the respondents' *actual* jobs in 1974.) An examination of intercorrelations among the items after the first (1966) data collection led to the construction of two scales, one showing strength of preference for "a job that pays off," and the other showing preference for "a job that doesn't bug me." The questions and response distributions for all five points in time are presented in Table 8-2.

At this point it may be useful to quote from *Youth in Transition*, Vol. II (based on tenth-grade data):

> Early analyses indicated that although these two scales are positively correlated ($r = .13$), they consistently show opposite relationships with other dimensions (such as SEL, intelligence, and level of aspired occupation). An examination of the items in Table 8-2 will help account for these preliminary findings. Agreement with the "job that pays off" items implies a good deal of ambition—an interest in using present skills, learning new skills, getting ahead, and earning good pay. Agreement with the "job that doesn't bug me" items suggests something quite different from ambition; in fact it shows a tendency to avoid many things that we associate with ambition— things such as hard work, long hours, responsibility, and learning new skills. This difference in orientation between the two scales helps us understand why they show opposite relationships with other

> dimensions, but it leaves unexplained the fact that the two scales have a slight positive correlation with each other. We suspect that the positive correlation reflects some degree of response set or positive response bias. There is a strong tendency to check the "job that pays off" items as being very important. This tendency is sharply reduced, but by no means eliminated, in the "job that doesn't bug me" items. Obviously, some respondents checked both kinds of items as being important for themselves, and this is the basis for the positive correlation between the two scales.
>
> Given these preliminary findings and our interpretation of them, it seemed appropriate to compute a summary index of ambitious job attitudes, an index which gives positive weight to the "job that pays off" items and negative weight to the "job that doesn't bug me" items. Such an index neatly cancels the effects of positive response bias (since a tendency toward checking "very important" operates half positively and half negatively in its effect on the index score) (pp. 139–142).

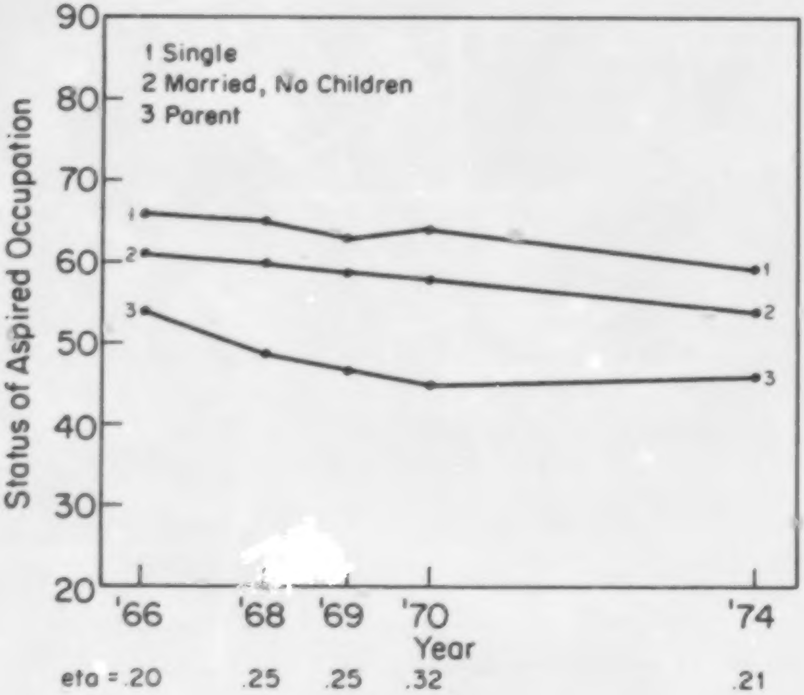
Changes in Job Attitudes. The changes over time, as indicated in Table 8-2, certainly confirm our original decision to group the items into two scales. Of the seven items in the "job that doesn't bug me" scale, five showed very large shifts in responses, and a sixth showed some amount of change, all in the direction of reduced importance. The most extreme examples are a shift from 24 percent at Time 1 to 73 percent at Time 5 who indicated it was "not important" to have "a job where I don't have to take a lot of responsibility," and a shift from 38 percent to 85 percent who indicated it was not important to have "a job that doesn't make me learn a lot of new things." Other dimensions which showed similar, but less spectacular, declines in importance are: not having to work too hard, not having to get dirty, and "a job that my friends think a lot of—has class." The six items in the "job that pays off" scale, on the other hand, showed virtually no change at all in response distributions. Good pay, job security, a chance to learn new things and get ahead, use of skills and abilities, and friendly co-workers, all rated "very important" for a majority of respondents and "pretty important" for most others.

The changes in responses of these young men, from age 15 to age 23, can be summarized in this way: The distinctions among items which were already evident at the start of the study became much sharper five years after high school. The young men in our sample continued to prefer jobs offering good opportunities; they became much less worried about whether a job required hard work, getting dirty, taking responsibility, and so on.

Relationships with Educational and Occupational Attainment. The overall shift in response distributions was not the only change that appeared in job attitudes. Another quite substantial change occurred in the

FIGURE 8-3

Status of Aspired Occupation Related to Marital/Parental Status



NOTE: The data underlying this figure can be found in Appendix E, Table E-8-3.

relationship between job attitudes and educational attainment. At the start of tenth grade, those who later went on to college showed more ambitious job attitudes than those who did not. Five years after high school, that relationship had actually reversed somewhat, and those with less education were a bit higher on our summary measure of ambitious job attitudes. The correlations for each item, as well as for the indexes, are presented in Table 8-3. Note that for each of the "job that doesn't bug me" items the Time 1 measure is negatively correlated with later educational attainment, while the Time 5 measure is less negatively correlated (and is positive for four out of the seven items). The index based

TABLE 8-2

Distributions of Job Attitude Items

	Percentage Responding:				
	Time 1 (1966)	Time 2 (1968)	Time 3 (1969)	Time 4 (1970)	Time 5 (1974)
INDEX: Preference for "A Job that Pays Off"					
ITEMS:					
2. A job that is steady, no chance of being laid off					
Very important	62.5	65.1	59.5	63.2	63.0
Pretty important	31.4	29.1	33.6	30.7	27.3
A little important	4.8	4.7	6.2	5.1	7.2
Not important	1.3	1.1	0.7	1.1	2.5
3. A job where I can learn new things, learn new skills					
Very important	57.8	55.9	51.2	53.6	59.9
Pretty important	32.9	36.7	41.1	40.0	33.3
A little important	8.2	6.7	7.0	5.5	5.9
Not important	1.1	0.7	0.7	0.9	0.9
6. A job with good chances of getting ahead					
Very important	69.2	65.3	63.5	61.1	68.7
Pretty important	25.7	28.9	31.5	32.6	24.7
A little important	4.2	5.0	3.6	5.3	5.0
Not important	0.9	0.8	1.4	1.1	1.6
9. A job where the pay is good					
Very important	64.6	57.3	55.9	53.1	54.5
Pretty important	29.4	36.8	37.7	39.7	38.1
A little important	4.5	4.9	5.5	6.0	5.9
Not important	1.5	1.1	0.9	1.2	1.5
11. A job that uses my skills and abilities—lets me do the things I do best					
Very important	63.1	61.1	58.8	56.0	65.2
Pretty important	30.3	32.8	33.9	36.8	29.6
A little important	5.5	5.0	6.6	6.5	4.2
Not important	1.1	1.0	0.7	0.7	1.0
12. A job that has nice friendly people to work with					
Very important	48.9	48.2	46.0	48.7	48.2
Pretty important	40.9	41.7	44.2	42.6	41.2
A little important	9.0	8.8	8.7	7.6	8.6
Not important	1.2	1.3	1.0	1.1	1.9
INDEX: Preference for "A Job that Doesn't Bug Me"					
ITEMS:					
1. A job where there's no one to boss me on the work					
Very important	14.5	13.0	11.6	14.8	18.3
Pretty important	43.2	37.4	40.9	44.8	33.5

TABLE 8-2—*Continued*

	Percentage Responding:				
	Time 1 (1966)	Time 2 (1968)	Time 3 (1969)	Time 4 (1970)	Time 5 (1974)
A little important	29.2	33.6	35.4	30.8	28.9
Not important	13.0	16.1	12.1	9.5	19.3
4. A job where I don't have to work too hard					
Very important	12.3	7.6	6.2	8.6	3.9
Pretty important	30.9	27.0	24.4	26.1	12.2
A little important	37.5	42.5	45.2	43.4	36.8
Not important	19.3	22.9	24.3	21.9	47.1
5. A clean job, where I don't get dirty					
Very important	15.4	11.3	9.9	11.6	5.9
Pretty important	26.8	25.2	24.6	24.5	17.2
A little important	31.0	34.2	36.8	36.6	29.9
Not important	26.7	29.3	28.7	27.3	47.0
7. A job where I don't have to take a lot of responsiblity					
Very important	10.6	6.5	5.3	4.9	2.0
Pretty important	28.1	21.2	18.8	17.5	5.3
A little important	37.3	37.0	41.4	36.5	19.7
Not important	24.0	35.3	34.5	41.1	73.0
8. A job that leaves me a lot of free time to do what I want to do					
Very important	24.0	16.7	15.3	17.1	15.7
Pretty important	38.5	39.1	38.7	44.0	36.8
A little important	28.3	32.6	36.3	30.5	33.2
Not important	9.1	11.5	9.7	8.4	14.2
10. A job that my friends think a lot of—has class					
Very important	24.9	15.0	11.3	12.2	5.0
Pretty important	35.2	27.8	26.9	27.5	16.4
A little important	25.6	35.2	40.3	35.3	30.1
Not important	14.3	21.9	21.5	24.9	48.5
13. A job that doesn't make me learn a lot of new things					
Very important	9.8	6.2	4.2	5.1	2.4
Pretty important	18.6	13.8	10.5	11.4	2.3
A little important	33.2	34.4	35.7	30.4	10.7
Not important	38.4	45.6	49.7	53.0	84.7

NOTE: The question numbers indicate the sequence in which the items appeared in the questionnaire.

on these items shows a substantial shift across time; the Time 1 index correlated −.21 with later educational attainment, while the Time 5 index correlated .07.

The "job that pays off" items also showed a shift in correlations with educational attainment. The items measured at Time 1 all correlated positively with later educational attainment, whereas by Time 5 the correlation was negative for all but one item (and that item showed a weaker correlation at Time 5 than at Time 1). The index based on these

TABLE 8-3

Job Attitudes Correlated with Educational Attainment

	Product-Moment Correlation between 1974 Educational Attainment and Each Job Attitude Dimension				
	Time 1 (1966)	Time 2 (1968)	Time 3 (1969)	Time 4 (1970)	Time 5 (1974)
INDEX: Preference for "A Job that Pays Off"	.13	.09	.04	−.01	−.07
ITEMS:					
2. A job that is steady, no chance of being laid off	.09	.00	−.05	−.06	−.15
3. A job where I can learn new things, learn new skills	.05	.02	−.02	−.02	−.05
6. A job with good chances of getting ahead	.17	.17	.11	.04	−.02
9. A job where the pay is good	.03	−.03	−.03	−.11	−.21
11. A job that uses my skills and abilities—lets me do the things I can do best	.17	.14	.11	.11	.11
12. A job that has nice friendly people to work with	.02	.02	.02	.01	−.02
INDEX: Preference for "A Job that Doesn't Bug Me"	−.21	−.11	−.11	−.08	.07
ITEMS:					
1. A job where there's no one to boss me on the work	−.05	.02	.02	.08	.12
4. A job where I don't have to work too hard	−.14	−.12	−.10	−.12	−.08
5. A clean job, where I don't get dirty	−.05	−.02	−.10	−.11	.12
7. A job where I don't have to take a lot of responsibility	−.27	−.21	−.24	−.17	−.18
8. A job that leaves me a lot of free time to do what I want to do	−.05	.03	−.04	.09	.12
10. A job that my friends think a lot of—has class	−.10	−.01	−.03	−.03	.19
13. A job that doesn't make me learn a lot of new things	−.25	−.17	−.17	−.20	−.17
INDEX: Ambitious Job Attitudes	.27	.15	.12	.06	−.11

items reflects these changes; the Time 1 measure correlated .13 with educational attainment, and the Time 5 measure correlated −.07.

The shift in relationship between job attitudes and educational attainment was most apparent in the summary measure of ambitious job attitudes. This index, measured at the start of tenth grade, correlated .27 with later educational attainment. Measured nearly eight years later, this index of job attitudes correlated −.11 with educational attainment. In other words, those who were headed toward higher levels of education were more ambitious than their fellow students in tenth grade; but after the different levels of education were actually attained, the positions were reversed, with the less educated showing slightly higher endorsement of most of the ambitious job attitude items.

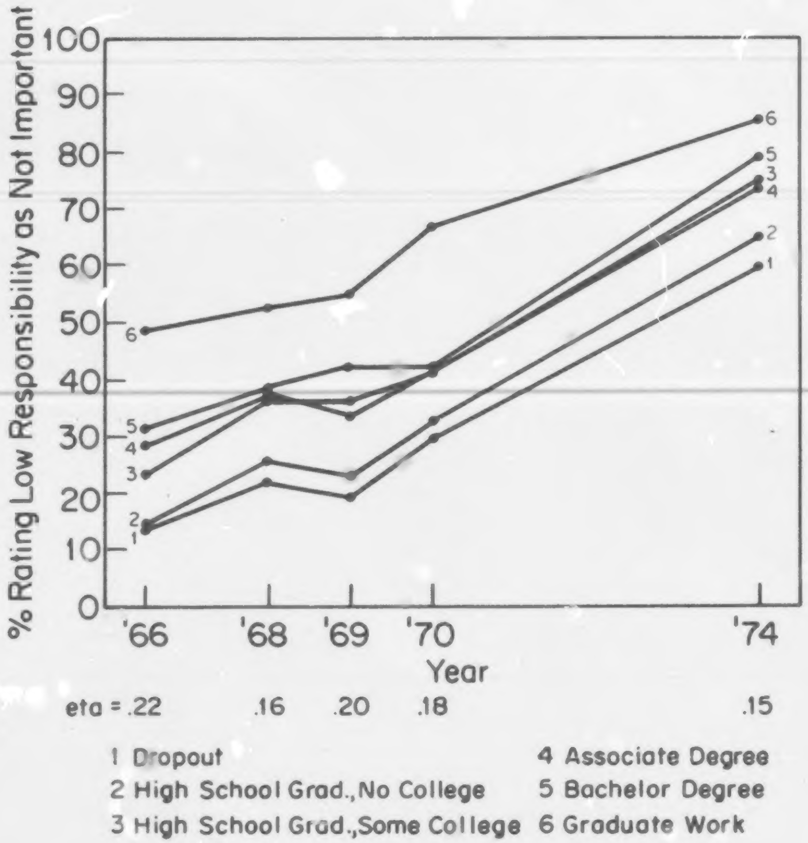
This overall pattern is not reflected equally in all items. An examination of Table 8-3 indicates that some items showed greater changes than others, and some showed a reversal in the direction of correlation while others showed only a change in strength. Thus it will be useful to examine some of the items separately in order to gain a fuller understanding of the way job attitudes are linked to educational attainment.

Two items of particular interest expressed preferences for "a job where I don't have to take a lot of responsibility" and "a job that doesn't make me learn a lot of new things." We noted earlier (see Table 8-2) that both of these items showed a very large increase in the proportion who rated them "not important." As they grew older, it appears that young men were increasingly willing to take on responsibilities and jobs that required them to learn a lot of new things. These attitudes showed some differences linked to educational attainment. The more education an individual eventually gained, the more likely he was to have started out with a greater willingness to take on responsibilities and learn new things (correlations of .27 and .25); eight years later a good deal of that difference remained (correlations of .18 and .17). Figure 8-4 presents the relationship graphically for the responsibility item (the picture is almost identical for the item about learning new things). In this instance we see that the less well educated were to some extent following after their better educated classmates, and to a slight degree they were catching up.

A rather different pattern of change was displayed by the item dealing with good pay. As Figure 8-5 indicates, at the start of tenth grade there were few differences in importance ratings associated with later educational attainment— all educational attainment groups started out with about 65 percent rating good pay as very important, except for the high school dropout group which had about 55 percent in that category. Eight years later, however, over 70 percent of the dropouts rated good pay as very important while less than half of those with graduate education gave such a high rating to good pay. In a very real sense, those with the highest levels of education can afford to be less concerned about good pay, because they are headed toward the best paying jobs. High school dropouts, on the other hand, have much more reason to worry about pay, and their responses suggest that many of them do. The same interpretation applies to a concern about a job that is steady with no chance for being laid off—at age 23 the better educated showed somewhat lower concern about this dimension than did the less educated ($r = -.15$).

FIGURE 8-4

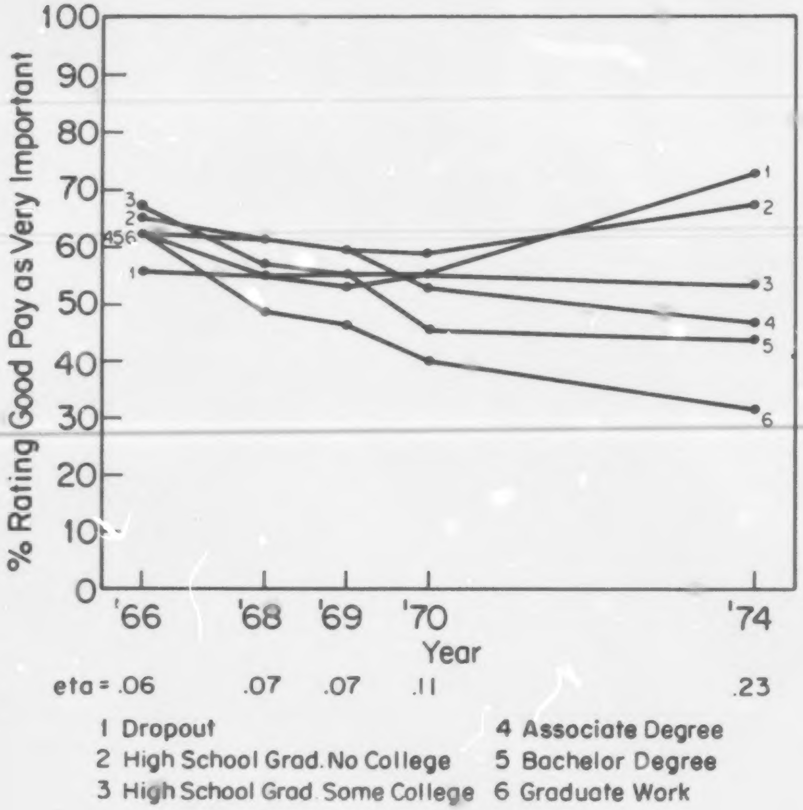
Preference for a Job with Low Responsibility Related to Educational Attainment



NOTE: The data underlying this figure can be found in Appendix E, Table E-8-4.

FIGURE 8-5

Preference for Good Pay Related to Educational Attainment



NOTE: The data underlying this figure can be found in Appendix E, Table E-8-5.

It is difficult to summarize the several different ways in which job attitude items are linked to educational attainment. At the most general level, we can say that the differences in attitudes evident at tenth grade were diminished and in some instances reversed eight years later. Those with lower levels of educational attainment became much more willing to take on responsibilities, learn new things, and get dirty if necessary; they also became more concerned about good pay and job security.

TABLE 8-4

Job Attitudes Correlated with 1974 Occupational Status

	Product-Moment Correlation between 1974 Occupational Status* and Each Job Attitude Dimension				
	Time 1 (1966)	Time 2 (1968)	Time 3 (1969)	Time 4 (1970)	Time 5 (1974)
INDEX: Preference for "A Job that Pays Off"	.10	.04	.04	.09	.06
ITEMS:					
2. A job that is steady, no chance of being laid off	.08	.04	.02	−.01	−.03
3. A job where I can learn new things, learn new skills	.03	−.03	.00	.04	.06
6. A job with good chances of getting ahead	.10	.09	.11	.10	.12
9. A job where the pay is good	.00	−.05	−.07	.01	−.05
11. A job that uses my skills and abilities—lets me do the things I can do best	.11	.06	.05	.17	.13
12. A job that has nice friendly people to work with	.04	.03	.03	.07	−.01
INDEX: Preference for "A Job that Doesn't Bug Me"	−.14	−.11	−.09	−.06	.04
ITEMS:					
1. A job where there's no one to boss me on the work	−.05	−.01	−.03	.02	.06
4. A job where I don't have to work too hard	−.11	−.12	−.06	−.08	−.09
5. A clean job, where I don't get dirty	−.01	−.03	.00	.05	.17
7. A job where I don't have to take a lot of responsibility	−.16	−.15	−.19	−.14	−.15
8. A job that leaves me a lot of free time to do what I want to do	−.07	−.01	.00	.04	.03
10. A job that my friends think a lot of—has class	−.08	−.08	−.02	.01	.16
13. A job that doesn't make me learn a lot of new things	−.18	−.12	−.10	−.16	−.13
INDEX: Ambitious Job Attitudes	.19	.12	.09	.10	.01

*This table includes only those in the civilian work force at Time 5 (N = approximately 965). It excludes those in military service and those who were primarily students. Because of these restrictions, the correlations for index scores do not match exactly those in Table 8-5 and in Appendix G.

A similar set of conclusions may be applied to the relationship between job attitudes and status of occupation (at Time 5). Those who held the higher status jobs at Time 5 had somewhat higher levels of ambitious job attitudes at the start of the study (r = .19) but by the end of the study the correlation was .01 (see Table 8-4). As Table 8-4 indicates, the same items which showed strong associations with educational attainment also were most strongly linked to occupational status, although the latter relationships tended to be somewhat weaker.

We can summarize this section by saying that those who eventually attained different levels of education or job status showed larger differences in job attitudes at the start of the study than at the end; moreover, the direction of the differences was often reversed. We are frankly at a loss as to whether to attribute these changes to the impact of college, or the impact of being in a noncollege (usually work) environment, or other more general phenomena of noncollege youth "catching up" with those in college. Moreover, we cannot be sure whether our observations for a cohort of young men studied in the late sixties and early seventies would be replicated among young people a decade later. The limitations of a single cohort longitudinal design, discussed in Chapter 5, continue to haunt us. What we can say is that within this cohort of young men, those who attained less education began the study with less ambitious job attitudes than those with higher eventual educational attainments; but by five years after high school they had closed, and to some degree reversed, this gap. At that point, nearly everyone wanted a good job and seemed willing to work hard if that is what the job required.

Relationships with Other Dimensions. The previous section provided a rather detailed look at the 13 job attitude items as they related to educational and occupational attainment. Now we will concentrate on the summary index of ambitious job attitudes. It may be worth noting that the two scales which make up that summary index, the "job that doesn't bug me" scale and the "job that pays off" scale, showed essentially the same pattern of relationship across all five data collections; in each case there was a modest positive correlation between the two scales, but they correlated in opposite directions with other dimensions. For this reason, the measure of ambitious job attitudes, which gives positive weight to the "pay off" items and negative weight to the "bug me" items, continues to be a very effective summary of the job attitude items.

Table 8-5 presents the relationships between the ambitious job attitudes index, measured at five points in time, and a number of background, ability, and post-high school experience dimensions. The pattern of shifting correlations observed earlier for educational attainment and job status can also be seen for family socioeconomic level (a drop from a correlation of .19 with the Time 1 job attitudes to −.09 with Time 5 attitudes) and for the composite ability measure (a much larger drop from .33 to −.07). In other words, the more gifted students and those from higher status families showed above average levels of job ambition

TABLE 8-5

Ambitious Job Attitudes Correlated with Selected Other Variables

	Product-Moment Correlation with Index of Ambitious Job Attitudes				
Variable	Time 1 (1966)	Time 2 (1968)	Time 3 (1969)	Time 4 (1970)	Time 5 (1974)
Educational Attainment (1974)	.27	.15	.12	.07	−.11
College Status Ranking*	.16	.08	.06	.02	−.08
College Mean ACT Score*	.08	.03	−.01	−.01	−.10
Ability Composite (1966)	.33	.26	.24	.22	−.07
Socioeconomic Level (1966)	.19	.13	.09	.07	−.09
Status of Occupation (1974)	.17	.11	.11	.09	.00
Employment (as of 1974)	.06	.03	.02	.02	.09
Military Service (by 1974)	−.02	−.01	.02	.09	.10
Married (as of 1974)	−.06	.03	.05	.06	.19
Married and a parent (1974)	−.08	−.01	.00	.01	.15

*Correlations are based on only those who attended a college or university.

when they were in tenth grade, but eight years later the others had caught up and even slightly surpassed them in concern for a good job.

Some relationship can be noted between college status measures and ambitious job attitudes, but it may represent little more than a watered-down reflection of the relationship with ability.

The fact that ambitious job attitudes showed such a strong correlation with ability in tenth grade fits well with our findings about educational and occupational attainment. High ability students, who are also most likely to attain high levels of education and job status, were much more likely to show high job ambition scores in tenth grade. But the question remains, why did the less able students show such a disproportionate increase in ambitious job attitudes? Was there simply a "ceiling effect"—an upper limit to the ambitious job attitude scale that permitted the less able to "catch up"? (That may be true for some of the items, but not for all of them.) Did something about the educational experience lead to a decrease in emphasis on things such as pay and job security? Alternatively, did the work experience of those who did not attend college lead them to become increasingly willing to take on responsibilities, work hard, and the like? Since the different kinds of post-high school experiences are complexly interconnected, we cannot disentangle these several possible causal explanations; each may be correct to some degree.

Several other dimensions of post-high school experience shown in Table 8-5 presented simpler patterns of relationship with ambitious job attitudes. Employment (versus unemployment) showed little consistent change in correlation across time (from .06 with the Time 1 measure of ambitious job attitudes to .09 with the Time 5 measure). Military service showed a bit more of a change; those who later entered the service were no different in job attitudes from others during the high school years (correlations ranged from −.02 to .02), but afterward they were very slightly higher in ambitious job attitudes (correlations of .09 and .10). Whether this reflects some effect of military service, or simply the absence of whatever "college effect" may have taken place for many others, is not clear from the zero-order correlations. A multiple regression analysis was carried out using earlier (Times 1, 2, and 3) measures of ambitious job attitudes, plus educational attainment and military experience, as predictors of Time 5 scores on the job attitudes measure. The resulting beta value of .05 for military service suggests rather little effect apart from education.

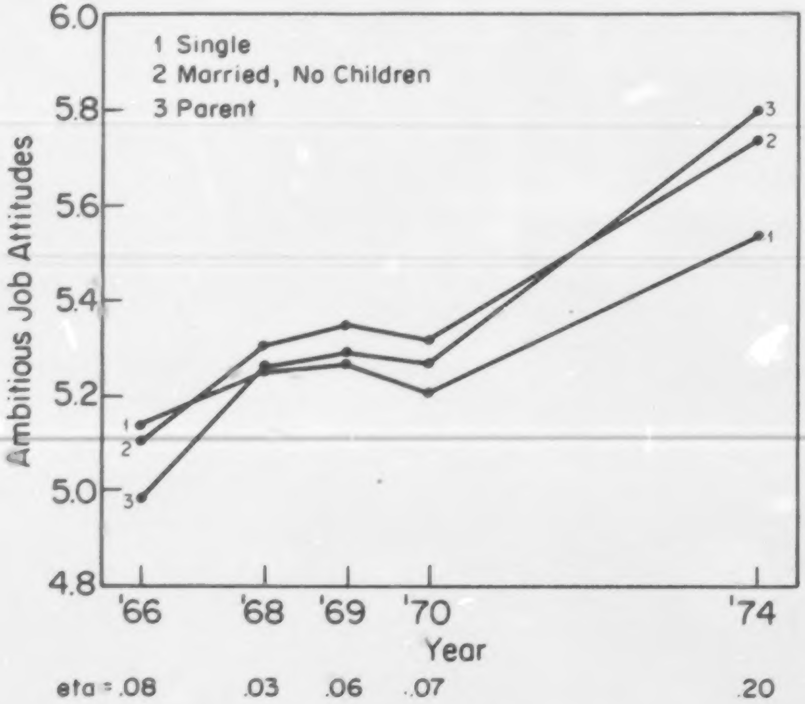
Another set of experiences, marriage and parenthood, also showed a correlation with ambitious job attitudes. As Figure 8-6 indicates, those who remained single at Time 5 showed some increase in ambitious job attitudes throughout the study; however, those who married, and particularly those who had children, showed stronger increases in job ambition. Given only the zero-order correlations, we cannot be sure that marriage and parenthood per se lead to a relatively large increase in ambition, since those who were married also were lower in average educational attainment. Thus they would be less likely to show a college effect on job attitudes or more likely to show a noncollege effect. A series of multiple regression analyses, used to predict the Time 5 measure of ambitious job attitudes, led to the following results: With Time 1, Time 2, and Time 3 measures of job attitudes included in the predictive equation, the relationship between marital status (a simple dichotomy) and the criterion was a beta value of .15. Controlling further for educational attainment (plus the other predictors) yielded a beta value for marital status of .14. Controlling still further for employment (versus unemployment) and for occupational status reduced the beta value to .13. Given this very small difference between beta values of .15 and .13, we conclude that the relationship between marital status and Time 5 job attitudes was almost entirely independent of the effects of educational and occupational attainment.

Some Cautions about Interpretations of these Data

The findings summarized above would seem to indicate that marriage has a positive impact on ambitious job attitudes. A caution is in order, however. Most of the marriages took place between Times 4 and 5, i.e., between one and five years following high school. The differential changes in job attitudes also took place during the post-high school years. It suits our theoretical biases, and also our intuitions, to interpret

FIGURE 8-6

Ambitious Job Attitudes Related to Marital/Parental Status



NOTE: The data underlying this figure can be found in Appendix E, Table E-8-6.

these correlated changes as indicating an impact of the experience of marriage. But an alternative interpretation is not ruled out. It is possible that young men who experience large increases in ambitious job attitudes are—subsequently and perhaps consequently—more likely to marry. The fact that this reverse explanation remains a clear possibility should serve as a caution that even when longitudinal data are available, it is often not possible to establish firmly the causal direction underlying a correlation.

The caution mentioned above really applies to much of the research reported in this volume. Four years is a substantial interval of time, especially when it is the span from one to five years after high school.

Finding, as we often have, that differences which are evident five years after high school were fully present at an earlier time leaves us fairly confident in asserting that we do not have much evidence for an effect of a post-high school environment. On the other hand, even when systematic change does occur in the same time interval with certain post-high school experiences, that does not constitute a clear demonstration that the experience(s) caused the change. The reverse pattern of causation remains possible, as does the "C causes both A and B" pattern discussed in Chapter 5.

These complexities by no means rule out causal interpretations. We consider some explanations of our findings much more plausible than others, and those more plausible explanations are the ones we have stressed. Moreover, the longitudinal nature of our data permit a considerable narrowing down in the range of possible interpretations. Still, it seems worthwhile at this point to reemphasize that although longitudinal data represent a great improvement over cross-sectional data, they do not by any means solve all of our problems of causal inference.

Chapter 9

DELINQUENT BEHAVIOR AND DRUG USE

Delinquency and drug use[1] have several things in common with the educational and occupational behaviors treated extensively in early chapters. All are considered by our educators, legislators, and the general public to be among the most important issues facing the nation's youth. Moreover, it is widely believed that these dimensions are interrelated, that is, that educational and occupational success may offer an alternative or partial solution to delinquency and drug use.

A second common factor is that delinquency, drug use, and educational and occupational attainment all are actual events; thus they can be reported relatively objectively. They do require some degree of accuracy in memory, and they also require considerable trust and candor in the survey situation. Nevertheless, they are reports of behaviors rather than attitudes or self-concepts; thus they may be a bit less susceptible to subtle "shading" of self-ratings in which factors such as academic ability may interact with the use of response scales.

One critical distinction is that educational and occupational attainment can be measured meaningfully only some years following high school, after the attainments actually occur, whereas delinquency and drug use can be measured repeatedly; they can be studied in a meaningful way throughout high school (and earlier) as well as the years that follow high school. Thus in this study, measures of delinquency and drug use provide the best opportunity to examine differences and changes in actual behaviors which may be linked to particular environments and experiences during and following the high school years.

As we shall see, some differences in post–high school experiences correlated with rather stable differences in rates of delinquency or drug use, i.e., the differences in behavior were present during high school and thus pre-dated the post-high school events. We shall see other differences, however, which reflect different rates of change, and these more strongly suggest differential impacts of environments and experiences.

Validity of the Measures

The measures of delinquency and drug use, described a bit later in this chapter, are based on respondents' self-reports. Because of this, and particularly because the behaviors not only are often illegal but in some cases are serious crimes, it is especially important to confront the question of validity. To what extent can we believe what our respondents have told us about their delinquent behaviors and their use of drugs? While we have no direct, objective validation of these measures, there exists considerable inferential evidence for their validity. Some of this evidence has been summarized by Johnston, O'Malley, and Eveland (1976, pp.14–15), and it is worth repeating here.

> 1. Well over 50 percent of the sample admit to some illegal behavior.
> 2. Although respondents were asked to leave the confidential items blank if they felt they could not answer them honestly, the percentage of missing data was essentially identical to that in the nonconfidential sections of the questionnaire.
> 3. Consistent and reasonable relationships exist between the drug use and delinquency items and other variables dealing with attitudes and behaviors.
> 4. A number of methodological studies (e.g., Petzel, Johnson, and McKillip, 1973) have included fictitious drugs in the questionnaires. Invariably these fictitious drugs show very low levels of reported use, indicating that intentional overreporting is not a problem.
> 5. The longitudinal nature of the present study precludes our providing anonymity to our respondents. This appears to make little difference for validity, however, since a number of studies have found no difference in reported drug use incidence among groups differing in anonymity (e.g., Leutgert and Armstrong, 1973; Haberman et al., 1972).
> 6. Studies similar to this one have shown similar prevalence rates of drug use for the same age group (Abelson and Atkinson, 1975; O'Donnell, 1976).
> 7. Gold (1970) used peer reports to establish that 77 percent of the boys aged 13 to 16 in a study of delinquency were "truthtellers." Another 11 percent were questionable, while 12 percent appeared to be concealing at least one offense.
> 8. Finally, considerable effort went into convincing the boys in the interview situations that their data were completely confidential. By 1974, the young men had been confiding in us for eight years already. It is difficult to believe that we would have observed as much stability in our data if there were large amounts of lying.

There is additional indirect evidence of validity; the measures seen in the following pages relate in meaningful ways to a number of other dimensions, including objective events. We did not state hypotheses in advance and then use the data to test them; nevertheless, the patterns of findings are in most respects clear and plausible.

In the final analysis, such inferences about validity become a matter of judgment, and the reader will have to decide whether the evidence is convincing. After considering the matter at length, our own view is that the measures are basically valid.

Delinquent Behavior

Measures of Delinquency. Our measures were adapted directly from the work of Gold (1966). Three indexes of delinquency were particularly useful and are included in the present report: an eight-item measure of *interpersonal aggression*, a nine-item measure of *theft and vandalism*, and a 10-item composite measure of *seriousness of delinquency* (consisting of three interpersonal aggression items and seven theft and vandalism items). Table 9-1 lists the items grouped according to the index, and shows the percentages of respondents who admitted each behavior.

A number of complications in the delinquency measures had to be taken into account in our analyses and interpretations. Most important, there were several changes in the time interval for which retrospective reports of delinquent behaviors were obtained. The first data collection asked respondents, "Please tell us how many times you have done these things in the last three years—say since you started the seventh grade." At Time 2, eighteen months later, the instruction was changed to read, "Please tell us how many times you have done these things in the last 18 months—since we last talked with you." At Time 3, twelve months later, the same instruction was repeated, but, the time interval was erroneously not changed to twelve months (the interval since last we had talked with the respondents); thus we cannot be sure how many respondents were responding to the part of the instruction which said "the last 18 months" and how many were responding to the statement "since we last talked with you." At Times 4 and 5 the instructions simply asked respondents how often they had done each thing "during the past year." Needless to say, the use of several different time intervals for retrospective self-reports on delinquent behavior is an unfortunate flaw in our measurement of this important area. (We cannot simply divide reported frequencies by the number of months involved, in part because we strongly suspect that the memories are sharpest during the first year.) Based on the greater wisdom of hindsight, we should have picked a one-year interval for all of the delinquency questions. Fortunately, our primary focus in this chapter is on relational analyses rather than overall shifts in delinquency rates; therefore, the problems outlined above do not seriously limit our ability to draw conclusions from the data.

TABLE 9-1

Delinquency Items, Indexes, and Response Frequencies

	Percentage of Respondents Who Reported the Behavior One or More Times during the Preceding Period				
	Time 1*	Time 2*	Time 3*	Time 4*	Time 5*
Interpersonal Aggression Index					
Hit an instuctor or supervisor	8	6	4	7	2
†Used a knife or gun or some other thing (like a club) to get something from a person	6	4	4	7	1
†Got something by telling a person something bad would happen to him if you did not get what you wanted	28	16	15	16	6
†Hurt someone badly enough to need bandages or a doctor	27	19	16	20	11
Taken part in a fight where a bunch of your friends are against another bunch	33	21	21	22	10
Gotten into a serious fight in school or at work	52	32	25	28	15
‡Hit your father	9	7	6	6	‡
‡Hit your mother	6	5	3	3	‡
Theft and Vandalism Index					
†Set fire to someone else's property on purpose	7	6	4	4	1
†Took a car that didn't belong to someone in your family without permission of the owner	9	6	5	6	3
†Took an expensive part of a car without permission of the owner	6	7	7	7	5
Damaged school property on purpose	25	19	17	18	4
†Took an inexpensive part of a car without permission of the owner	11	10	10	12	6
†Took something not belonging to you worth over $50	10	9	9	11	7
Went onto someone's land or into some house or building when you weren't supposed to be there	66	48	47	53	28
†Took something from a store without paying for it	50	36	34	41	24
†Took something not belonging to you worth under $50	46	37	39	45	35

*Reporting intervals were as follows: three years prior to Time 1, 18 months prior to Time 2, 12 or 18 months prior to Time 3, 12 months prior to Times 4 and 5 (see text for explanation). All percentages in this table are based on the total number of respondents available at each time (see Footnote 2).

†Item included in the *Seriousness of Delinquency Index*.

‡Item was not included in fifth data collection (see Footnote 2).

Further complications in the delinquency measures include: 1. a few item changes in the interpersonal aggression index; 2. some limitations in reliabilities because each index deals with a limited number of relatively rare events; and 3. slight differences in delinquency rates depending on whether the sample is restricted to those for whom delinquency data are available at all five time points. None of these complications, in our view, has seriously affected the basic findings and conclusions presented here.[2]

Change and Stability in Delinquency. As an examination of the items in Table 9-1 would suggest, the scores on all three delinquency indexes dropped appreciably from Time 1 to Time 2. Interpersonal aggression dropped more than half a standard deviation; theft and vandalism shifted more than a quarter of a standard deviation; the seriousness index dropped about a fifth of a standard deviation. Recall that the Time 1 measure was actually a retrospective account of delinquent behavior during the three prior years, i.e., seventh, eighth, and ninth grades; the Time 2 measure was an account of the preceding 18 months, or most of tenth and eleventh grade. The difference in time intervals may have had much to do with the shift in reported levels of delinquency, but there probably was also a real change reflected in the scores. In particular, the overall amount of interpersonal aggression reported for tenth and eleventh grades was well under half that reported for seventh through ninth grades. No doubt this reflects the changing norms and constraints which come into play as boys gain size and strength and become young men.

From Time 2 through Time 4, a reporting period spanning tenth grade through one year following high school, the average levels of reported delinquency remained roughly unchanged. But the annual rate of delinquency reported between four and five years after high school (the year preceding Time 5) was one-third or more lower on all three indexes. Not surprisingly, it appears that young men in their early twenties indulged in somewhat fewer delinquent behaviors than they did when they were in their late teens.

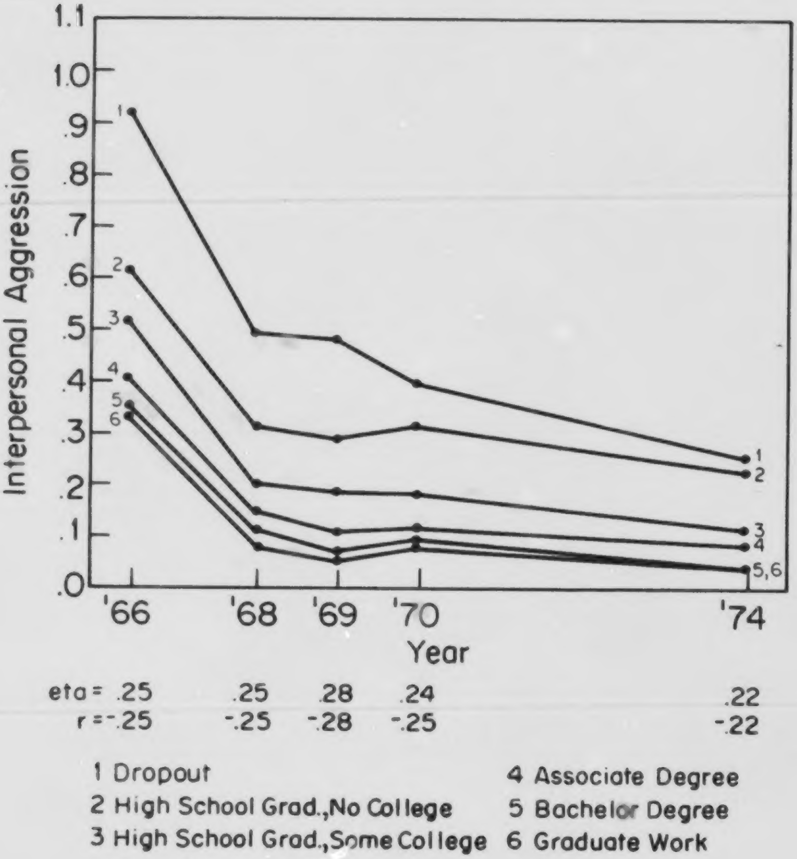
It seems clear that overall rates of delinquency changed during the span of more than 10 years covered by our reports. But to what extent did relative rankings along the delinquency scales remain the same? To what extent were the most delinquent young men during junior high school also the most delinquent in their early twenties? The actual correlations between Time 1 and Time 5 delinquency measures are not very high (a range from .26 to .28 for the three indexes). The pattern of the intercorrelations across time suggests that this is caused by rather low *reliabilities* of the measures (reliability estimates ranging from .50 to .55), whereas their *stability* may compare favorably with many of the other measures. As the data in Appendix F indicate, the stability estimates for the delinquency measures are comparable to those for self-esteem—annual stability estimates are close to .9, and estimated stabilities from Time 1 to Time 5 are about .4.[3]

Delinquency and Educational Attainment. All three dimensions of delinquency correlated negatively with educational attainment—the higher the level of education, the lower the level of delinquency. But this relationship, similar to a number of others that we have examined in previous chapters, does not point to education as the cause of the relationship. The differences in deliquency were evident from the start of the study. During junior high school those who later became high school dropouts were involved in serious delinquency more than twice as often as those who later became college graduates. The differences were even stronger along the scale of interpersonal aggression, as shown in Figure 9-1. Those who became dropouts had scores which averaged 0.92 at Time 1 compared with scores of 0.36 for those who obtained a bachelor degree and 0.33 for those who continued their education beyond a bachelor degree. (The lowest possible index score is 0.00, indicating zero delinquent behavior; a score of 1.00 would indicate an average of one delinquent behavior in each of the categories. Thus, a score of 0.92 represents more than double the delinquency of a score of 0.36.)[4]

Figure 9-1 shows quite clearly the overall decline in interpersonal aggression scores that we discussed earlier. The more interesting aspect of the figure is the consistent ordering of educational attainment categories. Just as we found for self-esteem, the differences among educational attainment groups were fully as clear at the start of the study as they were at the end. As a matter of fact, the absolute differences in amount of delinquency were a good deal larger for the Time 1 reports (representing the period from seventh through ninth grades) than for the Time 4 reports (representing the one-year period after most had graduated from high school), and the differences were smaller still for the Time 5 reports (representing a one-year period roughly between age 22 and 23). But the differences in absolute amount of delinquency can be misleading, especially when we recall that different time intervals were involved. The variance in delinquency, like the absolute level, declined over time. Thus, the correlations between educational attainment and delinquency are fairly similar across all five points in time when delinquency was measured. For example, educational attainment (measured at the end of the study) shows product-moment correlations of −.25 with interpersonal aggression reported at Time 1, and −.22 with interpersonal aggression reported at Time 5. The corresponding figures are −.12 and −.10 for the theft and vandalism index, and −.16 and −.12 for the composite

FIGURE 9-1

Interpersonal Aggression Related to Educational Attainment



*The measures of interpersonal aggression were retrospective. The 1966 measure asked about the past 3 years; the 1968 and 1969 measures asked about the past 18 months; the 1970 and 1974 measures asked about the past year.

NOTE: The data underlying this figure can be found in Appendix E, Table E-9-1.

seriousness of delinquency index. The correlations for delinquency measures at Times 2 through 4 are similar or slightly higher.

The relationships between delinquency and educational attainment reported here in many respects elaborate the findings reported in Volume III of the *Youth in Transition* monograph series. The data herein have extended our earlier findings in two ways. First, by adding another data collection we have added four years to the range of time sampled, and we find that although the overall levels of delinquency have dropped, the pattern of differences is nearly as strong as it was earlier. Second, we can now make finer distinctions in educational attainment by separating different categories of college attenders and graduates. This more refined measure of educational attainment than was possible at Time 4 (one year beyond high school) provides a very neat ordering in terms of delinquent behaviors. Each increment in educational attainment corresponds to a lower average level of delinquency.

As before, we found that the high school dropout group stood sharply apart from the other groups—at least during the high school years. After high school (Times 4 and 5) this group was not so very different from those whose education ended with high school graduation. The point which must be stressed is that higher delinquency did not follow on the heels of dropping out of high school. On the contrary, it was clearly present during the junior high school years (the period covered by the delinquency reports at Time 1). These data fail to support the contention that high delinquency rates are a consequence of quitting school. Given the temporal sequence, it seems more likely that delinquency contributed to dropping out of school. This may be particularly true for delinquent behaviors in school, a dimension measured only in the first three data collections and reported in Volume III. Still another explanation is that the "C causes both A and B" pattern of causation is heavily involved here: failure experiences in school lead to both delinquent behavior and (somewhat later when the young men reach or pass their sixteenth birthday) dropping out of school.[5]

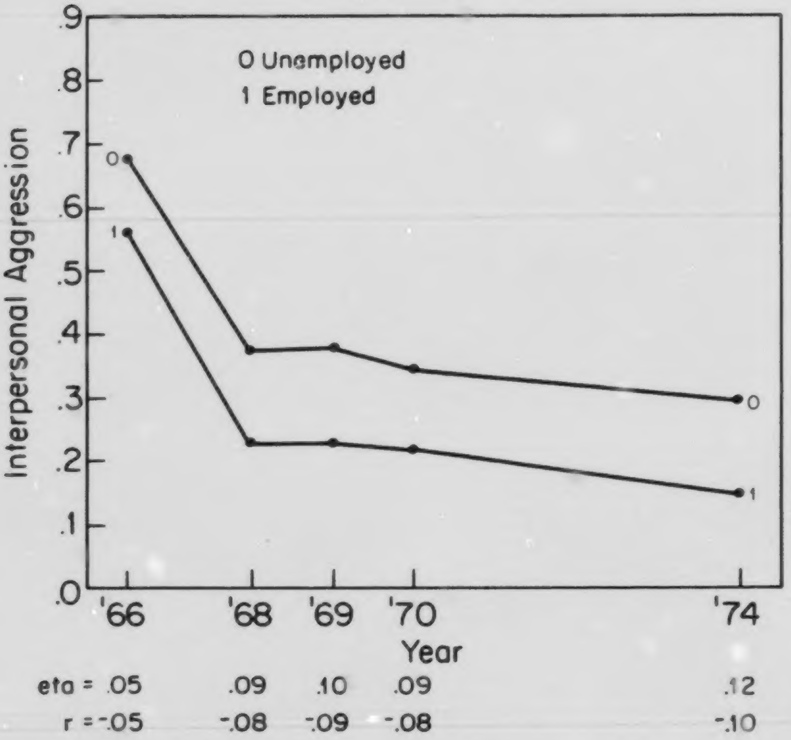
Employment, Unemployment, and Delinquency. Does being out of a job lead to increased levels of delinquency? We noted in Chapter 5 that unemployment, especially in the case of high school dropouts, seemed to have an impact on self-esteem. In order to explore the possible impact of employment versus unemployment on delinquency, we undertook a set of analyses dealing only with those in the civilian work force, excluding those who at Time 5 were primarily students or in the armed forces. At Time 5 the unemployed respondents reported levels of interpersonal aggression twice as high as the levels for the employed, theft and vandalism were about 60 percent more frequent for the unemployed, and on the composite measure of seriousness of delinquency the unemployed were about 65 percent higher than the employed (all differences statistically significant beyond the .01 level). Along each of these dimensions there were also differences in the Time 1 through Time 4 scores for those who later were employed and unemployed; in each case the delinquency scores averaged somewhat higher among those who were unemployed at Time 5. The relationship for the interpersonal aggression index is displayed in Figure 9-2. As the figure indicates, the differences in interpersonal aggression grew larger from Time 1 through Time 5. But the figure also indicates that distinct differences existed by the end of high school (Time 3); thus it cannot be said that differences which appear at the end of the study were solely the result of unemployment.

In our efforts to understand the linkages between unemployment and delinquency, it may be useful to recall that high school dropouts were more heavily unemployed and were also relatively high in delinquency. Perhaps the impact of unemployment on delinquency is particularly severe among dropouts. To explore this possibility, we repeated the analyses of employment and delinquency separately for dropouts, high school graduates, and those with varying amounts of college. The results for interpersonal aggression, although based on very small numbers of cases, are provocative. Among high school graduates, the aggression levels at Time 5 were almost twice as high for the unemployed as for the employed. The differences were much smaller for those with some college or with bachelor degrees. But it was among the high school dropouts that the differences were most striking: the unemployed dropouts reported interpersonal aggression levels at Time 5 fully three times as large as those reported by employed dropouts. Had these results appeared only for the Time 5 interpersonal aggression data, it would be more convincing evidence of an impact of unemployment. By Time 4, however, there was already a two-to-one difference in interpersonal aggression. (It may be, of course, that these same dropouts were having difficulty obtaining employment at earlier points in time, and that this was contributing to their high levels of aggression at Time 4.)

It is important that we keep these findings in perspective. Most of the high school dropouts were employed at Time 5. Moreover, most of those unemployed at Time 5 had graduated from high school (and many had at least some college). Thus the relationship between unemployment and interpersonal aggression is not solely, or even primarily, a result of the relatively small group of unemployed dropouts. But the effect seems particularly strong within this group. A similar effect was not in evidence when we examined the theft and vandalism scale or the composite measure of seriousness of delinquency. Dropouts who were unemployed

FIGURE 9-2

Interpersonal Aggression Related to Employment Status



*The measures of interpersonal aggression were retrospective. The 1966 measure asked about the past 3 years; the 1968 and 1969 measures asked about the past 18 months; the 1970 and 1974 measures asked about the past year.

NOTE: The data underlying this figure can be found in Appendix E, Table E-9-2.

at Time 5 scored very slightly higher than those who were employed, but these differences were present more or less consistently from the junior high school years (measured at Time 1) through high school and the years that followed.

We will return to the relationship between unemployment and delinquency in the section on multivariate analyses. To summarize our findings thus far, it appears that unemployment and delinquency are indeed correlated and the relationship is not altogether simple or straightforward. Those who were in the ranks of the unemployed at Time 5 began the study with slightly higher levels of delinquency, but those differences in delinquency increased and were fairly substantial at the end of the study. The relationship was strongest for the measure of interpersonal aggression, and it was particularly pronounced among high school dropouts. We thus have another interesting bit of data about that group of unemployed dropouts: they had the highest average level of interpersonal aggression as well as the lowest average level of self-esteem (see Chapter 5).

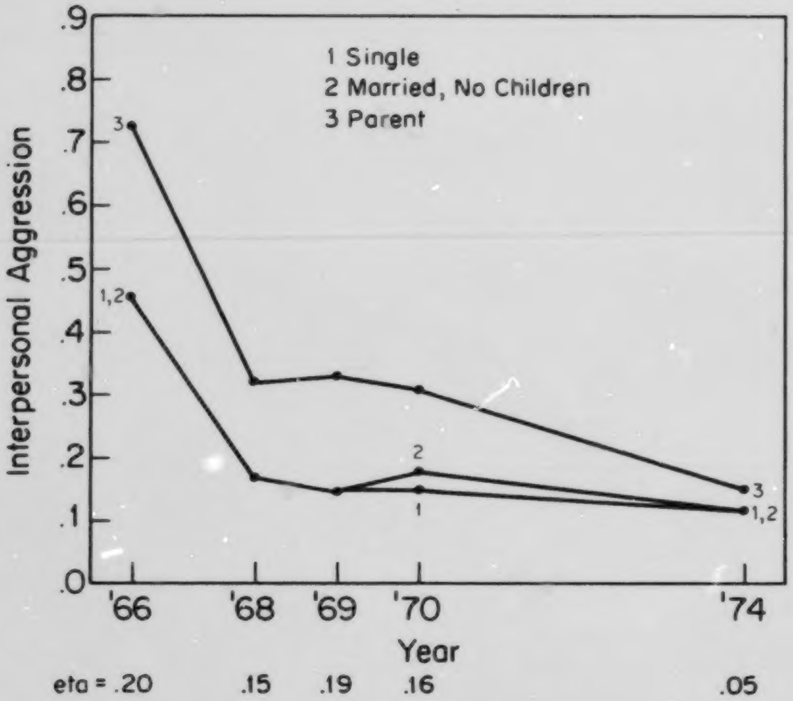
Job Status and Delinquency. The relationship between job status (at Time 5) and the delinquency measures can be summarized fairly easily. Those with a history of greater delinquency tended to have lower status jobs at the end of the study. The relationship is not strong, but it is consistent for all three delinquency scales across all five time intervals: the product-moment correlations for delinquency measured at Time 1 range from −.10 to −.13; those for delinquency measured at Time 5 range from −.09 to −.11; and those for Times 2, 3, and 4 range from −.11 to −.14, plus one value of −.17.

This rather small relationship, which shows delinquency differences just as strong at the start of the study as at the end, does not suggest that high status jobs lead to lower delinquency. Nor does it suggest very strongly that delinquency is a direct cause of job status, since educational attainment (also correlated with delinquency) is a far more powerful determinant of job status. On the contrary, the pattern of correlational findings, as well as the multivariate analyses summarized below, can best be interpreted as another instance of "C causes both A and B." Job status and delinquency appear to be modestly correlated because they are both linked to other prior factors, including those factors which lead to different levels of educational attainment.

Marriage, Parenthood, and Delinquency. An examination of the delinquency levels of those who were single, those who were married without children, and those who were married with children, revealed an interesting and rather unusual pattern of relationships. Here, as in most of the preceding analyses, the index of interpersonal aggression shows the strongest associations; they are displayed in Figure 9-3. Throughout the first four data collections, which report delinquency from seventh grade throught the first year beyond high school, we see that those young men who married and became parents before age 23 had shown consistently higher interpersonal aggression—often nearly twice as high.

FIGURE 9-3

Interpersonal Aggression Related to Marital/Parental Status



*The measures of interpersonal aggression were retrospective. The 1966 measure asked about the past 3 years; the 1968 and 1969 measures asked about the past 18 months; the 1970 and 1974 measures asked about the past year.

NOTE: The data underlying this figure can be found in Appendix E, Table E-9-3.

By the end of the study, however, the difference had largely disappeared. The pattern of differences is similar, though not as strong for the index of theft and vandalism, and the composite measure of seriousness.

On the face of the findings in Figure 9-3, it would seem that those who marry and become fathers (not necessarily in that order) at a relatively early age tend to be those with somewhat above average levels of interpersonal aggression throughout junior and senior high school. But four to five years beyond high school they are not much more aggressive than their age-mates. Is this simply because most young men become less aggressive when they reach their early twenties and thus the differences are attenuated? That interpretation does not square well with our findings linking aggressive behaviors to unemployment or to educational attainment. Although aggressive behaviors show an overall decline, the distinctions related to education and unemployment tend to remain fairly strong. An alternative explanation of the findings in Figure 9-3 is that marriage and parenthood contribute somewhat to the "reform" of previously aggressive individuals. We have seen that unemployment was low among those young men who were married and had children. Perhaps that level of responsibility also contributed to a reduction in overt aggression. As we demonstrate later in this chapter, there are some very interesting differences in patterns of drug use among married versus single men consistent with this interpretation.

Multivariate Analyses Relating to Delinquency. A series of multiple regression analyses were carried out following the general approach introduced in Chapter 5. It quickly became apparent that controls for family socioeconomic level, number of siblings, and academic ability would be of little value in dealing with the delinquency measures. The zero-order product-moment correlations between those dimensions and the Time 5 theft and vandalism index range from −.02 to .02, and for the Time 5 seriousness of delinquency measure the range is from −.05 to .02. The correlations with the interpersonal aggression index are also small, but not entirely trivial. Time 5 interpersonal aggression correlates −.09 with family socioeconomic level, .06 with number of siblings, and −.16 with academic ability. The earlier measures of delinquency, especially those at Time 3, show somewhat stronger relationships with the background and ability measures; the most prominent instance is the correlation of −.29 between academic ability and interpersonal aggression reported at Time 3. It remains true, however, that once the Time 1, 2, and 3 versions of any of the delinquency measures enters into a regression equation predicting delinquency at Time 5, there is no gain whatever in predictive power as a result of including the background and ability dimensions. (In most instances the adjusted multiple correlation is actually a tiny bit lower, indicating that the background and ability measures add more "noise" than information.)

Therefore, we can use a simpler form of regression analysis in which we control only for the earlier (Time 1, 2, and 3) delinquency measures in order to examine the effect of a particular experience or environment. We conducted such analyses for our three most important predictors, educational attainment, job status, and employment. For each of the delinquency measures, we found standardized multiple regression coefficients (betas) for educational attainment and job status much lower than the corresponding zero-order correlations. In other words, controlling earlier levels of delinquency greatly reduced the predictive power of educational attainment and job status. When these two predictors were included simultaneously in equations, along with the earlier levels of the delinquency measure in question, the contribution of job status was further reduced to statistical (as well as substantive) nonsignificance. We did not, however, find that controlling earlier levels of delinquency substantially reduced the predictive power of the employment/unemployment dimension. The beta values are somewhat lower than the zero-order correlations, to be sure; but the shrinkage is far less pronounced than that found for the other two predictors.[6]

Our conclusions from this series of multivariate analyses are consistent with our earlier observations based on bivariate analyses of the delinquency measures at multiple points in time. It appears that the different levels of delinquent behaviors, especially interpersonal aggression, shown by those with different levels of educational attainment reflect deeply ingrained patterns of behavior that were present as early as junior high school. As Figure 9-1 clearly indicates, the differences in aggression levels were just as large during the junior and senior high school years as during the later period after the respondents finished sorting themselves into different levels of educational attainment. Delinquency correlates less strongly with job status than with educational attainment, although the correlations show the same pattern of consistency over time; we thus conclude that these correlations appear simply because job status is a weak proxy for educational attainment. Unemployment remains an environmental or experiential factor which may have some direct impact on aggression. But even here, as Figure 9-2 indicates, the differences in aggression were largely (though not entirely) present during the high school years. On the whole, then, we conclude that the delinquency differences linked to educational and occupational circumstances at Time 5 are largely a reflection of long-standing patterns which preceded the specific post-high school experiences we have been examining.

Use of Cigarettes, Alchohol, Marijuana, and Other Drugs

The Youth in Transition project did not set out to treat drug use as an outcome or criterion measure. But by the late sixties it became clear that this was an area of great importance to youth and of great concern to society in general. Therefore, we included in our fourth and fifth data collections a number of questions about the use of illegal drugs, as well as about the use of alcohol and cigarettes. An extensive analysis of the drug information from the fourth data collection has been completed by L. Johnston (1973), and an analysis of the drug material from the fifth data collection is being carried out presently by Johnston and his colleagues. In particular, an analysis of the interrelationships between delinquent behavior and drug use has already been completed by Johnston, O'Malley, and Eveland (1976), and their conclusions based on that analysis are worth quoting:

> What, then, do we conclude from all of this? First, we do *not* conclude that drug use does not lead to crime, since one very important type of use— the "addict"—is not sufficiently represented in this sample to be investigated. While our data would tend to suggest that the type of person who progresses through drug use to the point of heroin use is likely to be a substantially more criminal personal than average, even before drug use, it seems quite likely to us that many addicts increase their levels of crime to support their habits. We would also not want to suggest that alcohol, while it was not under investigation in the present paper but which is certainly a drug, does not lead to criminal behavior. Other investigators have developed evidence that suggests that alcohol may indeed be a contributing factor in assaultive crime . . . .
>
> What we *do* conclude from these explorations is that non-addictive use of illicit drugs does not seem to play much of a role in leading users to become the more delinquent persons we know them to be on the average. The reverse type of causation seems considerably more plausible, i.e., that delinquency leads to drug use. For example, we think it quite possible that delinquents who, because of their delinquency, became part of a deviant peer group are more likely to become drug users, since drug use is likely to be one approved behavior in such a peer group. We also suspect that the correlation between delinquency and drug use stems not only from such environmental factors, but also from individual differences in personality. Both delinquency and drug use are deviant behaviors and therefore both are more likely to be adopted by individuals who are prone toward deviance than by those who are not. The fact that other forms of delinquency tended to precede drug use (at least in this cohort) may simply reflect the fact that proneness toward deviance is expressed through different behaviors at different ages. Further, for this cohort the notion of using illicit drugs at all was just rising to consciousness among these young people as they passed through high school. Studies of a more recent class cohort would undoubtedly show less precedence of drug use by other forms of delinquency, since the average age of first drug use has declined markedly (Johnston et al., 1976, pp. 33–34).

Extensive analyses of the drug use data from the Youth in Transition study will be presented elsewhere. Our purpose in this volume is limited to a few key drug use dimensions and the ways in which they relate to, and perhaps reflect the impact of, different post–high school environments and experiences. Our analyses and interpretations are made keeping in mind the above-mentioned cautions about causal interpretations of drug use data.

Measures of Drug Use. The fourth data collection (Spring 1974), approximately one year after most respondents had graduated from high school, included a set of drug use questions immediately following the delinquency items, and the special instructions that stressed confidentiality thus applied both to delinquency and drug use items. The drug questions first asked respondents to report how often they had used each of a number of substances" . . . during part or all of the last year for other than medical reasons." The response scale ranged from "Nearly every day" to "Never." The questions covered use of cigarettes, alcohol, marijuana, amphetamines, barbiturates, hallucinogens (e.g., LSD), and heroin. (The phrase "for other than medical reasons" was included so that any reported use of amphetamines or barbiturates would be illicit use.)

The first group of questions asked about the time interval which, for most, corresponded to the year after high school—approximately Summer 1969 through Spring 1970. The questions were followed by a second set, identical to the first, except they asked about the period "previous to this past year (that is, before last summer) . . . ." These questions are more retrospective than the others, which would ordinarily make them suspect; however, we are dealing here with events that have clear social and psychological significance for most respondents, and also with a time interval that for most is easily demarcated—the period preceding high school graduation. We agree with Johnston et al. (1976, p. 7) that this set of questions:

> . . . probably provides a reasonable estimate of drug use during the senior year, although it does not ask about the specific period. Insofar as some subjects may have stopped using certain drugs before reaching their senior year, it may actually over-state the annual prevalence figures. However, earlier analyses (Johnston, 1973, pp. 42–44) suggested that very few users stopped using drugs in the year after graduating from high school, and it seems reasonable to conclude, at least for the high school class of 1969, that very few decreased their illicit drug use prior to graduation, either.

Nevertheless, it may be useful to remember that the figures for drug usage labeled 1968–69 actually represent upper limits.

The Time 5 data collection (Spring and Summer 1974) included a repeat of the first set of drug items used in the Time 4 survey, i.e., the questions asked about use" . . . during part or all of the last year . . . ."[7]

Given the Time 4 and Time 5 measures outlined above, we will be dealing with three one-year intervals that can be defined approximately as follows: 1968–69, for most respondents the senior year of high school; 1969–70, the first year following high school; 1973–74, the fifth year following high school (and, for some, the first year following college).

We will look separately at use of cigarettes (on a daily basis), alco-

TABLE 9-2

Changes in Usage Rates for Cigarettes, Alcohol, Marijuana, and Other Drugs

	Percentage of Respondents* Reporting Usage During the Period		
	1968–69	1969–70	1973–74
Daily Use of Cigarettes	35	40	44
Weekly Use of Alcohol	31	44	58
Any Use of Marijuana	21	35	52
Any Use of Amphetamines, Barbiturates, Hallucinogens	12	18	24

*This table is based on only those respondents who participated in *both* the fourth and the fifth data collections. The number of cases on which each percentage is based varies (because of missing data) from 1,357 to 1,405. (See footnote 8.)

hol, marijuana, and other (illicit) drugs. We will see some similarities, but also some differences among these four categories of substance use as they relate to post–high school experiences; thus it seemed useful to analyze each separately. On the other hand, it was not useful for our purposes to distinguish among the illicit drugs other than marijuana. Instead, we use an index which simply takes a mean of responses to the questions about amphetamines (A), barbiturates (B), and hallucinogens (LSD). For convenience we will sometimes use the abbreviation A/B/LSD to refer to this composite measure. We did not include heroin use in this composite because it is so rare in our sample, and also because the few heroin users are also relatively heavy users of the other drugs and are thus already given a high score on the A/B/LSD measure.

Change and Stability in Drug Use. Not surprisingly, we find that the usage levels for all the substances we examined increased from 1968–69 to 1969–70, and then showed a further increase by 1973–74. The usage rates for these three periods, summarized in Table 9-2, show that daily cigarette use increased somewhat, while weekly alcohol use nearly doubled. The proportion reporting any use (during the year) of amphetamines, barbiturates, or hallucinogens doubled; the proportion reporting any use of marijuana more than doubled, rising from one-fifth of the sample during the senior year of high school to just over half of the sample five years later.[8]

The estimates of stability and reliability for these measures, detailed in Appendix F, indicate that drug usage has been measured fairly reliably. The stability estimates, on the other hand, are relatively low, except for cigarette use. These low estimates are quite understandable from the data in Table 9-2. There is only a 9 percent increase in cigarette users; but if we consider that relatively few smokers quit, we can conclude that the vast majority of respondents were doing the same thing (either smoking daily or not) in 1973–74 as in 1968–69. That means the stability of this measure is quite high. For each of the other three dimensions, however, there is a dramatic shift in overall levels of usage. Many individuals increased their use of alcohol, and many who had not used marijuana or other drugs in 1968–69 used them at least experimentally in 1973–74, and that indicates low stability.

Since usage rates for alcohol, marijuana, and other drugs seem to have changed substantially during the span we measured, these behaviors may represent an especially promising area in which to look for differential changes linked to post–high school environments and experiences. Cigarette use, by way of contrast, is likely to show less in the way of differential patterns of change.

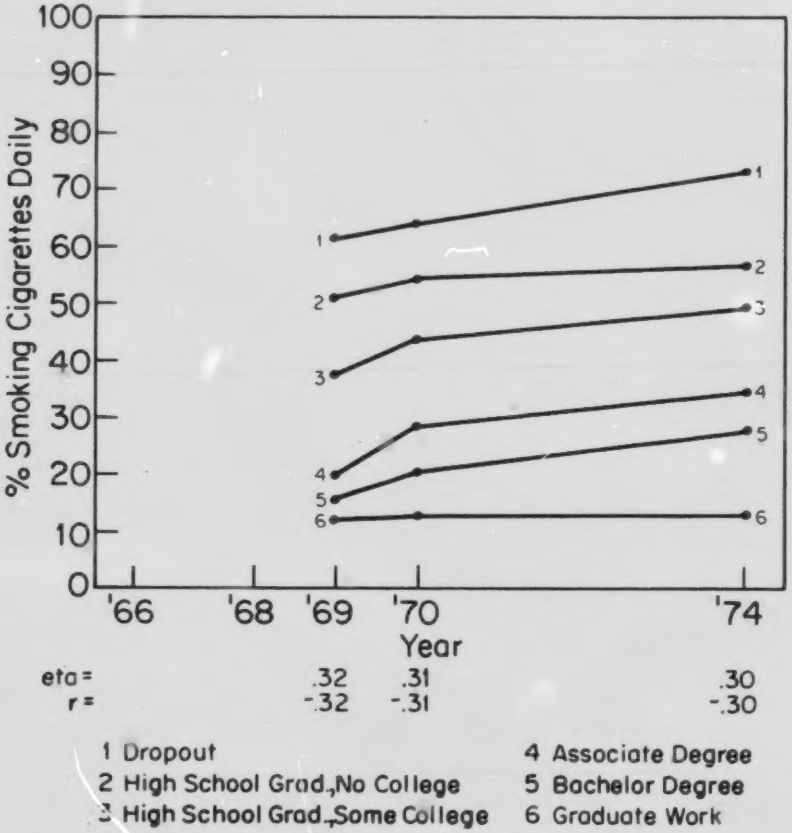
Educational Attainment and Drug Use. The largest difference between those who go or do not go to college does not lie in the use of alcohol, marijuana, or other illicit drugs. On the contrary, the really big difference linked to educational attainment is in the daily use of cigarettes. As Figure 9-4 indicates, by Time 5 about three out of four dropouts reported daily cigarette smoking, whereas one in seven of those who went on to graduate work after college were smokers. Each of the other educational attainment subgroups is neatly ordered in between—the higher the level of education attained, the lower the proportion of smokers.

Could this lowered frequency of smoking among the better educated be primarily a result of their additional schooling? Figure 9-4 suggests it is not, since the differences were clearly in evidence by the senior year of high school. Although smoking rates showed an overall rise during the five years following high school, the correlation between daily smoking and educational attainment remained virtually unchanged. The correlation is −.32 between smoking in 1968–69 and educational attainment, and the correlations for the subsequent smoking periods are −.31 and −.30. This does not mean that further schooling has no effect on smoking rates; it would be more accurate to say that additional education seems to have the effect of maintaining the differences which were present by the time most were seniors in high school.[9]

One more positive indication of possible educational impact is the negative correlation ($r = -.17$) between college quality and cigarette use —the higher the status of the college or university a young man attended, the less likely he was to be a daily smoker in 1973–74. Here again we find that the relationship was anticipated by smoking rates during high school—those headed toward the higher status colleges were less likely to be smokers during their senior year—but the correlation is not as strong ($r = -.11$).

FIGURE 9-4

Cigarette Smoking Related to Educational Attainment



NOTE: The data underlying this figure can be found in Appendix E, Table E-9-4.

We conclude that post–high school educational experiences may have some marginal impact on cigarette smoking, but it appears that if we are to account for most of the relationship between smoking and educational attainment we must seek earlier causes.

Possibly the family background and ability dimensions which relate to educational attainment are important determinants of smoking behavior. However, an examination of product-moment correlations revealed that neither ability nor socioeconomic level nor number of siblings correlated more strongly than −.12 with smoking, and using all three variables in a multiple regression equation produced an (adjusted) R of only .14. A more promising possibility is that earlier educational success, which is strongly linked to later educational attainment (see Chapter 2), is also correlated with smoking behavior by the senior year of high school. One such measure of early educational success, classroom grades, does indeed correlate with senior year smoking; the correlation is −.25 when predicting from ninth grade grades (reported at Time 1), and for later measures of grades the correlations are −.26. (The other indicators of earlier educational success or failure, such as being held back a grade, show much weaker correlations with smoking.)

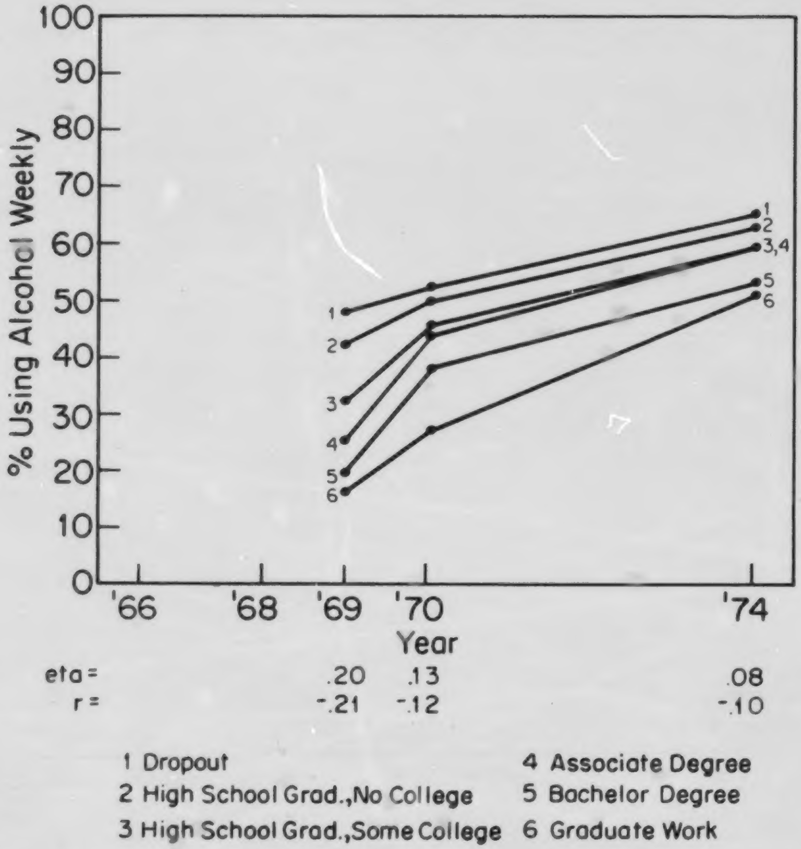
The fact that smoking is much less frequent among young men who got good grades in junior and senior high school, and then went on to college, does not provide us with a clear explanation as to why their smoking rates were lower; but it does suggest one strong possibility. During the last decade there has been increasing evidence, widely reported in the media, pointing to the health hazards involved in smoking. It seems likely that those young men who are more successful in school are probably also the ones most likely to read and take seriously such reports on the dangers of cigarette smoking. It is worth noting in this connection that a more recent study, dealing with the high school class of 1975, has shown a positive correlation (r = .19) between classroom grades and ratings of the amount of harm likely to be caused by smoking one or more packs of cigarettes per day.[10]

Turning next to alcohol use, we find that again the educational attainment groups were different by the time they reached the senior year of high school. But in this case, the differences diminished during the next five years. The findings are displayed in Figure 9-5. Those who completed college (including the group which went on to graduate study) had the lowest rates of alcohol use at all times studied; in the senior year of high school just under 20 percent drank as often as once a week, but five years later the figure was about 50 percent. High school dropouts, by way of contrast, showed nearly 50 percent drinking at least weekly as early as 1968–69, and by 1973–74 the rate was over 60 percent.

The differences in alcohol usage clearly are not attributable to educational attainment since they were stronger during high school than afterward. Nor is there any appreciable correlation between alcohol use and family background or ability. As in the case of daily cigarette use, alcohol use during the senior year of high school shows negative relationships with grades (r = −.18 for grades in both ninth grade and twelfth grade) and with the status of the college eventually attended (r =

FIGURE 9-5

Alcohol Use Related to Educational Attainment



NOTE: The data underlying this figure can be found in Appendix E, Table E-9-5.

−.12). Alcohol use during the senior year also shows some correlation with the measures of delinquent behavior; thus, it may represent part of the syndrome of delinquent behavior that we have found to be consistently related to later educational attainment. Since for many of the respondents the use of alcohol in 1968–69 was illegal, something that was not the case by 1973–74 when they were in their early twenties, it is not surprising that the differentiation according to educational attainment was stronger in 1968 through 1970 than in 1973–74. Consistent with this explanation, the measure of alcohol use in 1973–74 generally correlates less strongly with the delinquency measures.

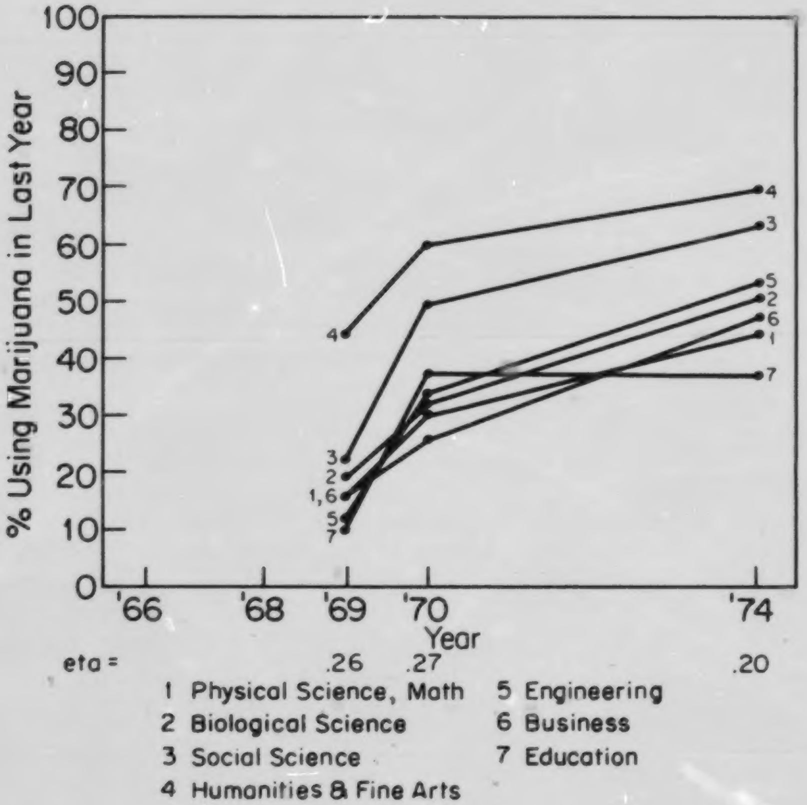
When we turn to those substances which are strictly illegal, we find much less relationship with educational attainment. Marijuana use for the three time intervals measured correlates −.09, .00, and −.05 with educational attainment. The comparable correlations between educational attainment and the composite measure of amphetamine, barbiturate, and/or hallucinogen use are only slightly stronger: −.12, −.09, and −.09. Simply going or not going to college does not appear to bear much relationship to the use of illegal drugs (nor, for that matter, does the quality of the college attended).

College Major and Drug Use. Although college attendance seems to have little correlation with use of illegal drugs, the same cannot be said for the major program of study elected in college. Here we find some fairly substantial differences, although once again it seems likely that the drug use differences preceded the post–high school experience in question. Figure 9-6 presents the results for the use of marijuana. The outstanding group consists of those who became majors in the humanities and fine arts. Before they left high school, 44 percent of the young men in this category had tried marijuana—a figure twice as high as was found for any other college major group. During what was the first year of college for most (1969–70), 60 percent of the humanities and arts group had used marijuana at least once, and the figure for social science majors had reached 50 percent. Four years later these two groups still led all others; 69 percent of the humanities and arts majors and 64 percent of the social science majors had used marijuana at least once during the year. The rest of the college major groups are much less differentiated. Those majoring in education (including elementary, physical, special, etc.) were the least likely to use marijuana at all three points in time; 37 percent of them reported having used marijuana at least once during the year 1973–74. The other four groups of college majors are crowded together so closely in Figure 9-6 that it may be difficult to distinguish one from another; the usage rates among these groups for 1973–74 ranged from 46 percent to 53 percent.

The findings for the amphetamine, barbiturate, hallucinogen composite measure are in some respects similar to the marijuana findings shown in Figure 9-6. Again, the humanities and arts majors showed the highest rates of usage: 26 percent, 36 percent, and 40 percent during the three time intervals, respectively. The other groups showed much lower usage rates during the senior year of high school; five years later they

FIGURE 9-6

Marijuana Use Related to College Major



NOTE: The data underlying this figure can be found in Appendix E, Table E-9-6.

still were lower than the humanities and arts majors. During that 1973–74 period, 31 percent of the social science majors and 28 percent of the biological science majors reported some use of A/B/LSD. The rest of the college major groups were clustered between 19 and 21 percent, except for the education majors, 15 percent of whom reported some A/B/LSD use during 1973–74.

The college major groups are not very different in use of cigarettes and alcohol. During the last year of high school 33 percent of those who became arts and humanities majors were daily smokers, a figure which rose to 39 percent five years later (1973-74). The other groups were all clustered together at about 35 percent daily smokers in 1973-74, except for those who majored in education (24 percent) and the physical sciences and math (20 percent). The differences in alcohol use are small and not worth reporting, except perhaps to mention that this is the one category of substance use in which the arts and humanities majors did not show the highest levels—they were second from the bottom, with only the education majors showing lower frequencies of weekly alcohol use.

Occupational Experiences and Drug Use. The two dimensions of occupational experience of interest to us here are job status and employment (versus unemployment). The correlations between these dimensions and our several measures of drug use are presented in Table 9-3. The correlations are all negative, but most are rather small. Alcohol use, in particular, shows little association with job status and virtually none with employment.

Cigarette use in 1973-74 shows a correlation of −.16 with job status, but this is simply a reflection of the stronger correlation between educational attainment and cigarette use. (When both educational attainment and job status are entered into a multiple regression analysis predicting 1973-74 cigarette use, the beta coefficient for job status is only −.03 whereas that for educational attainment is −.26.) There is a modest set of correlations indicating that those unemployed at Time 5 were more likely to be daily cigarette smokers during high school and beyond. Sixty-one percent of those who were unemployed in 1974 were daily smokers, compared with 45 percent of those employed in the civilian work force. But these two groups had been about as different in their rates of smoking back in 1968-69—the figures then were 53 percent compared with 35 percent. Thus it hardly seems that unemployment increases the likelihood of becoming a daily smoker.

As Table 9-3 indicates, it is when we turn to the illegal drugs that we see somewhat stronger relationships with job status and particularly with employment/unemployment. In the case of job status, the correlations with both marijuana use and use of amphetamines/barbiturates/hallucinogens show a gradual rise over time: there is virtually no relationship between drug use in the senior year of high school (1968-69) and later job attainment, but at the end of the study (1973-74) we find somewhat higher usage rates among those with lower status jobs. The employment/unemployment dimension shows the same pattern of in-

TABLE 9-3

Job Status and Employment/Unemployment Correlated with Use of Cigarettes, Alcohol, and Illicit Drugs

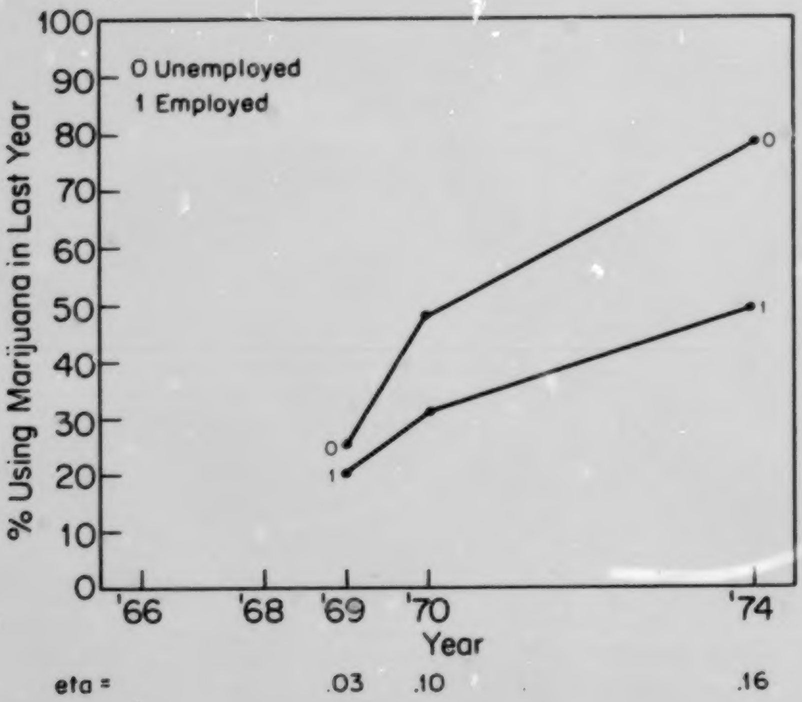
	Product-Moment Correlation with:	
	Job Status	Employment (vs. Unemployment)
Daily Cigarette Use		
1968–69	−.14	−.10
1969–70	−.14	−.05
1973–74	−.16	−.09
Alcohol Use		
1968–69	−.08	−.04
1969–70	−.06	−.01
1973–74	−.07	−.04
Marijuana Use		
1968–69	−.02	−.05
1969–70	−.04	−.10
1973–74	−.10	−.18
Use of Amphetamines, Barbiturates, and/or Hallucinogens		
1968–69	−.03	−.08
1969–70	−.08	−.06
1973–74	−.12	−.16

creasing correlations from 1968–69 through 1973–74, but more strongly. As Figure 9-7 indicates, there is a much sharper rise in the proportion of unemployed respondents reporting any marijuana use, compared with those who were employed. The A/B/LSD dimension shows a very similar pattern: 46 percent of the unemployed group had used at least one of the drugs in 1973–74, compared with 22 percent of the employed; back in 1968–69 the rates were, respectively, 19 percent and 11 percent. While these findings do not prove that unemployment leads to increased drug use, since both may be caused by other factors, the data certainly are consistent with the argument that failure to find a job contributes to drug use.

Marriage and Drug Use. We noted earlier in this chapter that the young men who were married and parents before the 1974 data collection had been higher in interpersonal aggression during their high school years, but had shown a greater than average drop in aggression following high school (see Figure 9-3). We examined the drug use data for the same three groups—those who were single in 1974, those who were married without children, and those who had children. Our findings again suggest that marriage may have an effect of "toning down" the excesses of young men in their early twenties, in this case because the single men show greater increases in drug use than the married ones. The findings for marijuana use show the effect quite clearly, and are displayed in Figure

FIGURE 9-7

Marijuana Use Related to Employment Status



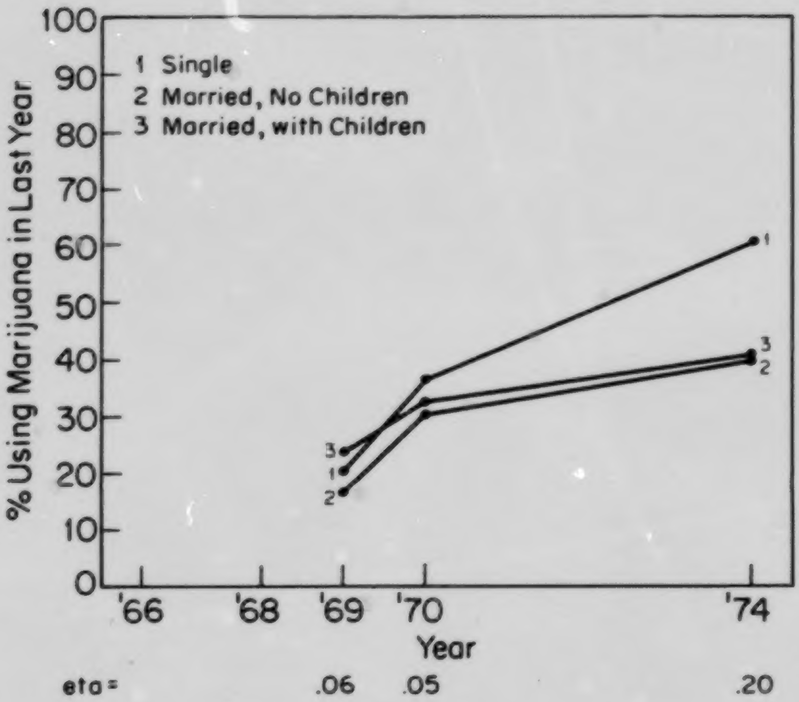
NOTE: The data underlying this figure can be found in Appendix E, Table E-9-7.

9-8. Note that the three analysis groups were quite similar during the last year of high school (1968–69) and in the first year following high school (1969–70); however, in 1973–74 about 60 percent of the single men used marijuana at least once, compared with about 40 percent of the married men. It is worth noting that one of the items included in the questionnaire in 1974 asked all respondents who were *not* currently using marijuana to check the reasons why; one of the frequently checked responses was "My wife or girlfriend would disapprove."

The difference between married and unmarried men appears also for the use of amphetamines, barbiturates, and/or hallucinogens. During the

FIGURE 9-8

Marijuana Use Related to Marital/Parental Status



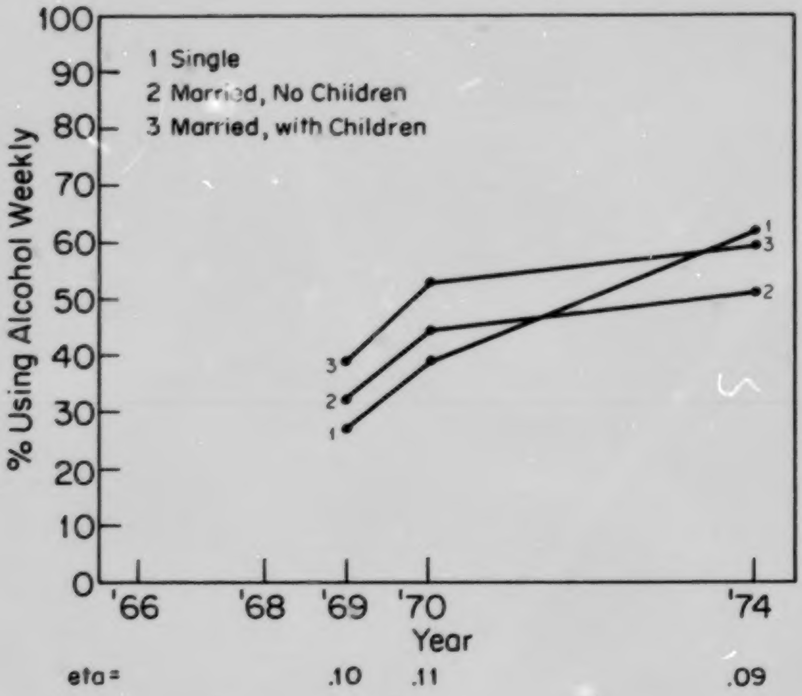
NOTE: The data underlying this figure can be found in Appendix E, Table E-9-8.

last year of high school the groups were very similar, and in the next year (1969–70) about 16 to 18 percent of each group reported at least some A/B/LSD use. But in 1973–74 the rate of use by married men (both parents and nonparents) remained at about 17 percent, whereas the rate for single men rose to 29 percent.

The findings for weekly alcohol use, shown in Figure 9-9, show a similar pattern of greater increases for the single men, although the three groups started from different base levels during the senior year of high school. The young men who were soon to become parents showed the highest percentage of weekly alcohol users during the last year of high school (1968–69) and the first year thereafter (1969–70). Those who were

FIGURE 9-9

Alcohol Use Related to Marital/Parental Status



NOTE: The data underlying this figure can be found in Appendix E, Table E-9-9.

to remain single during the next five years showed the lowest percentage during the 1968–70 period. But during the interval from 1970 through 1974 the proportion of the single men who used alcohol at least once a week increased from less than 40 percent to more than 60 percent; during the same interval the proportions for the married men increased by only about 6 or 7 percent.

The findings for cigarette use show little differential change among groups. Those who were married and parents by about age 23 (1974) showed consistently higher proportions of daily cigarette users from high school onward: from 48 percent during the senior year to 55 percent five years later. The other two groups had about 30 percent daily smokers in the senior year and just under 40 percent five years later.

The Impacts of Environments and Experiences: An Appraisal

We stated at the outset of this chapter that our measures of delinquency and drug use provide our best opportunity to examine the ways that particular environments and experiences may be linked to actual behaviors, and especially to changes in behavior patterns. The findings presented have shown a number of instances in which post-high school experiences are correlated with behaviors; however, we are still unable to make some important distinctions among correlated variables. Some patterns of findings strongly suggest that post-high school experiences have had a genuine impact on delinquency and/or drug use. Other patterns are better interpreted as reflecting stable differences—the result of the "C causes both A and B" type of relationship discussed in Chapter 5.

Educational attainment is correlated with delinquency, cigarette use, and alcohol consumption, but in each case the findings suggest that the differences in behavior preceded the sorting out by level of education. In other words, a more accurate description of the findings is that young men with high rates of delinquency, cigarette use, and alcohol use are less likely to reach high levels of educational attainment.

It is also accurate to say that those with above-average levels of delinquency and drug use are less likely to attain high status jobs. The relationships here are weaker than those involving educational attainment, and multivariate analyses indicate that they are primarily a reflection of the impact of educational attainment on job status.

We must emphasize that it is only because we have longitudinal data that we can feel at all confident about such conclusions. If we had only the data collected at the end of the study, we would certainly have had to entertain the possibility that education might have a direct causal impact on delinquency. But given our findings across time, we can conclude that any educational impacts on these kinds of behaviors must involve educational experiences prior to high school—perhaps prior to junior high school.

When we turn to the experience—or environment—of being unemployed, the pattern of findings is distinctly different. Interpersonal aggression, marijuana consumption, and use of other illicit drugs were all far above average for the unemployed. The correlation coefficients reflecting these relationships are misleadingly low because the proportion of unemployed was quite small. The more compelling statistic is that young men unemployed in 1974 reported fully twice as much interpersonal aggression and illicit use of such drugs as amphetamines, barbiturates, and hallucinogens as did those who were employed. Measures of drug use and aggression during 1969–70 showed much smaller differences between those who would, and would not, be unemployed by 1974. Thus it seems likely that unemployment makes some fairly direct contribution to behaviors which are generally defined as undesirable.

While unemployment seems to have an undesirable effect on behaviors, it appears that the experience—or environment—of marriage has a positive effect. Those who married and became fathers by age 23 had been well above average in interpersonal aggression during junior and senior high school, but five years later they were very similar to the rest of the sample in mean level of aggression. In the area of drug use, there were few differences during high school between those who soon married and those who did not. But by the fifth year after high school, the proportion of single men using marijuana and/or other illicit drugs were half again as large as the proportion of married men.

Does unemployment heighten aggression and drug use? Does marriage tend to "reform" some overly aggressive individuals, and does it decrease the likelihood of drug use? Our findings in this area are suggestive, but not definitive. In each case an alternative path of causation is also plausible. Increases in aggression and drug use in the years following high school may contribute to unemployment and decrease the likelihood of marriage. But the fact that we are dealing with different patterns of change in behaviors, rather than stable differences in behaviors, leads us to favor an explanation in terms of environmental/experiential impact. Future research designed to disentangle these two causal interpretations should involve more frequent (at least annual) data collections.

We see here, as in other chapters, that educational attainment, and the related dimension of occupational status, are correlates but probably not causes of differences among young men. But we do have some rather provocative evidence that unemployment contributes to aggression and drug use, while marriage may tend to reduce such behaviors.

Notes

[1] The data on delinquent behavior and drug use treated in this chapter have also been analyzed extensively by L. Johnston, O'Malley, and Eveland (1976). In particular, their analysis concentrated on the relationship between drug use and delinquency. We will not treat those relationships here, but will cite their conclusions. We will also borrow extensively from their paper in describing the measures and the issue of validity.

[2] Several of the complications in the delinquency items occurred because we did not adequately anticipate the need for revisions in the delinquency measures as our respondents moved through high school and then into the post-high school years. (One reason for this is the fact that the Youth in Transition project was originally designed to have only three data collections, with the third one occuring shortly after the end of high school.) The original

list of delinquent behaviors adapted from Gold's (1966) work included 26 delinquent behaviors. The list was shortened to 21 items at the fourth data collection in order to omit a number of school-specific items (none of which was included in the three indexes used in this report). Three more items were removed in the final data collection, two of which had been included in the interpersonal aggression index, as noted below.

A number of modifications were made in the interpersonal aggression index because some items became less appropriate in their original form. For the first three data collections the item "Hit an instructor or supervisor" had been worded "Hit a teacher," and the item "Gotten into a serious fight in school or at work" had not included the reference to work. Also, the items about hitting father or mother were not included in the last data collection (when the young men were at an average age of 23). An examination of the frequency distributions of the two changed items suggests that the changes in wording making them less school-specific did not produce any important shift in responses. Omitting the two items about hitting a parent led to very little loss in information; by the fourth data collection (when the respondents were about 19) only 6 percent reported having hit their father during the last year, only 3 percent hit their mother, and there is good reason to think that four years later the percentages would have been still lower. (Not having these very low frequency items included in the index computation at Time 5 has the effect of making the interpersonal aggression scores higher than they would have been if the two items had been retained. In other words, omitting these two items has the effect of slightly underestimating the drop in interpersonal aggression from Time 4 to Time 5.)

The reliabilities of the delinquency indexes are estimated to be rather low—a range from .50 to .55 (see Appendix F). One reason for these low levels of reliability has to do with the fact that the delinquency items deal with events which are fairly infrequent during the junior high school years and which become still less frequent during the years that follow (see Table 9-1). Because of this, a difference of one scale point on any one item (e.g., getting into a fight one time rather than not at all) would be sufficient to move an individual out of the majority category for interpersonal aggression at Time 5 (the majority reported no instances of any of the six behaviors measured). This means that our indexes, even though they are based on six to 10 items each, make relatively crude distinctions among individuals, and this in turn means that reliability levels are decreased. If we wanted our measures of delinquency to have the same level of reliability as we attain with our 10-item index of self-esteem (in which respondents make extensive use of at least three of the five scale points for each item) we would probably require 50 or more delinquency items. Fortunately, the comparison of different subgroups is not so seriously affected by the limited reliability of the delinquency measures, and such analyses are the primary focus of this chapter. The place where low reliability causes more serious problems is in multivariate analyses that attempt to assess change and causal impact by "controlling" earlier levels of delinquency. If delinquency is not very reliably measured, the "controls" provided by multiple regression analyses are not complete.

We noted in our discussion of the retention rates for our longitudinal panel that the Time 5 questionnaire successfully reached some respondents who did not participate in earlier data collections, particularly the interview/questionnaire session at Time 4 (one year after high school). For most purposes, our strategy of limiting analyses to those who participated at Time 5 has not given us problems, even though the "middle" data collections and particularly the one at Time 4 have had higher proportions of missing data. In the present topic areas, however, the problems are a bit more noticeable. The delinquency levels of those who missed Time 4 but returned to the study at Time 5 were (at both the start of the study and the end) a bit higher than the levels for those who participated at both Time 4 and Time 5. The distortions are not really severe; nevertheless, we found it preferable for some analyses in this chapter to further restrict the sample to those who participated at *both* Time 4 and Time 5. (Incidentally, the same strategy was employed for some of the drug use analyses. In this case data were collected *only* at Time 4 and 5, so it was particularly appropriate in some analyses to limit ourselves to those respondents who participated on both occasions.)

Perhaps one other complication is worth noting. The percentages reported in Table 9-1 are based on the total sample participating at each data collection, rather than only Time 5 (or Times 4 and 5) participants. This was unavoidable, because the data on individual items were not retained for individual respondents (thus making it impossible to compute frequency distributions on each item for any particular subset of respondents). The individual item responses were destroyed, after initial frequency distributions were run and index scores were computed, in order to insure that no individual's report of any *particular* delinquent (and sometimes criminal) activity could be recovered from our data files. This lack of precise matching of respondents across time means that the frequencies presented in Table 9-1 must be viewed as only approximations. Nevertheless, the differences across time are quite substantial, whereas the biases introduced by sample shifts are very limited. Thus, the broad conclusions drawn from the table remain valid.

[3] See the third paragraph in Footnote 2 for a further discussion of the reliability of these delinquency measures.

[4] Respondents were asked to report how often they had done each behavior using this five-point scale: Never (during the time interval in question); Once; Twice; Three or Four times. In this chapter we have in effect assigned values of 0 through 4 to these five scale points so that the resulting index is very close to a true ratio scale. Since very few (less than 5 percent) of the respondents gave higher values than "Twice" in answering most questions, we are comfortable with treating the delinquency measures as ratio scales. (It should be noted that the original calculation of the index scores resulted in a scale with a possible range from 100 through 500. The figures reported in this chapter were transformed into the 0 to 4 scale by subtracting 100 from the original index score and then dividing the remainder by 100.)

[5] This interpretation was suggested in a personal communication from our colleague Martin Gold.

[6] As we noted in Footnote 2, the reliability of the delinquency measures is unusually low and this presents special problems for multiple regression analyses. The lower reliabilities mean that the observed correlations between the early delinquency scores and the Time 5 scores are substantially lower than the "true" correlations. Thus, when we introduce these correlations into the multiple regression formula, we are only partly controlling earlier levels of delinquency. This results in an overstatement of the contribution of the other predictors such as educational attainment, job status, and unemployment. One way of attempting to solve this type of problem is to introduce adjustments for reliability. We have not chosen to carry these analyses to that level of complexity for several reasons, the most compelling of which is that even with the present inadequate controls the basic direction of the findings seems sufficiently clear.

[7] The fifth data collection, which was sponsored in part by the White House Special Action Office for Drug Abuse Prevention, included a considerable number of other questions about drugs (placed *following* the questions about use during the past year). These questions are not central to our present analyses, and will be treated at length elsewhere.

[8] In computing the drug use percentages, and in most other analyses in this section, we have followed the practice employed in our analyses of delinquent behavior; i.e., we have limited the sample to those who participated in both the Time 4 and Time 5 data collections (rather than simply limiting to those who participated at Time 5). The roughly 200 individuals who missed the fourth data collection but participated in the fifth reported slightly higher usage rates than the rest of the Time 5 sample. By excluding them from the present analyses, we avoid an overestimate of the increases in drug use from Time 4 to Time 5, but we also very slightly underestimate the actual usage levels for the whole sample at Time 5. Since our emphasis is primarily on relational analyses and changes, this restriction in the sample seems appropriate. (It should be added that the correlational data used in our multivariate analyses were not restricted to those who participated at both Times 4 and 5.)

[9] In a multiple regression analysis predicting daily smoking in 1973–74, and using daily smoking in 1968–69 plus educational attainment as predictors, the beta values for the two predictors are, respectively, .59 and −.12. The beta value of −.12 for educational attainment after controlling for smoking level during high school is no doubt an overestimate of its true impact; the control for early smoking is limited by the fact that we used a dichotomous version of the cigarette smoking question at both time points, whereas if we had used the continuous version and/or if we had incorporated adjustments for unreliability the contribution of educational attainment in the multiple regression analysis would have been reduced.

[10] This finding, not yet published, is based on the Monitoring the Future project currently being conducted at the Institute for Social Research.

Chapter 10

SUMMARY AND POLICY IMPLICATIONS

How can we sum up the key findings from our eight-year span of research? What have we learned about the transition from late adolescence to early adulthood? Much of what we have found is captured by Wordsworth: "The child is the father of the man."

We have seen that educational attainment five years beyond high school is highly predictable from background, abilities, and aspirations measured in tenth grade, and we have seen that occupational status is predictable from these factors plus education. We have learned that a wide range of individual characteristics such as self-esteem, values, attitudes, aspirations, and behavior patterns show a rather high degree of consistency across time. We sought to discover impacts of various environments and experiences during the post–high school years, and we found some. (No doubt there are many other important impacts of environments and experiences which our research failed to capture.) But the dominant and most striking findings are those showing distinctions among groups that have been stable across the eight-year span of the study. In particular, differences between those who would later drop out of high school and those who would graduate, and differences between those who would and would not attend college, were already present to a remarkable degree at the start of tenth grade.

In this chapter we first review the findings presented in earlier chapters. We then discuss some policy issues and implications for education which we think follow from these findings.

Summary of Findings

Educational Attainment as an Outcome

One of our primary research objectives has been to assess the degree to which education attained by age 23 is predictable from measures obtained at age 15. This is important for two reasons. First, and more obviously, it suggests the degree to which an individual's eventual level of education—and thus many other important outcomes and experiences—can be thought of as fixed or pre-determined by the time the individual begins tenth grade. We do not mean to imply some sort of fatalism, for we are dealing only with predictions which hold true *on the average*. Nevertheless, it seems important to understand the extent to which later educational events are usually constrained by background, ability, and early experiences.

A second reason for predicting eventual educational attainment from data available at age 15 is that it helps us to understand and interpret the relationships which exist between educational attainment and later outcomes. To take one of our favorite examples, we found that self-esteem in tenth grade predicts later educational attainment, and this is a crucial factor in interpreting the fact that self-esteem at age 23 is somewhat higher among college graduates.

In Chapter 2 we reported that we could account for just over 50 percent of the variance in educational attainment by using the "best set" of predictors. These predictors include family socioeconomic level, number of siblings, intellectual ability, average classroom grades (as of ninth grade), college plans, negative school attitudes, delinquent behavior in school, curriculum (college prep or not), and grade failure (having been held back a grade). In other words, by knowing background, ability, and a few indicators of success in school and attitudes toward schooling, all measured at the start of tenth grade, we can do a rather good job of predicting eventual educational attainment.[1]

A key finding from the multivariate analysis is that much of the impact of background and ability overlaps the impacts of schooling factors. We take this as evidence that a substantial proportion of the impact of background and ability is *indirect*. In other words, background and ability contribute to pre–high school educational experiences and success, which in turn contribute to later educational attainment.

Occupational Attainment

Another of our research objectives was to learn how well we could account for occupational attainments. Chapter 3 examined three different indicators of attainment: status, wages, and employment (versus unemployment). In seeking predictors of occupational attainments, we examined virtually all dimensions measured in 1966, as well as several 1974 measures of what we called environments and experiences. Special attention was paid to educational attainment, since a primary purpose of the Youth in Transition project has been to explore the longer-range effects of dropping out of high school, and the most important effects of dropping out would presumably be those having to do with occupational outcomes.

Effects of Dropping Out of High School. In any study of dropouts, one critical issue is the definition of dropouts. In our earlier analysis of dropping out (*Youth in Transition*, Vol. III), we considered a dropout to be anyone who had interrupted his full-time attendance in high school for more than a few weeks (except for illness). Some who were dropouts under that definition later returned to school, and some attained diplomas. Indeed, as early as 1970 we identified a small group of "dropouts with diplomas"—those who had interrupted high school but soon afterward either returned to school or attained a diploma through other channels. Now, given data extending to five years beyond the point of normal graduation, it has proven useful to define dropouts more narrowly as those who interrupted high school rather permanently, i.e., those who still lacked a diploma five or more years after they dropped out.

A second critical issue in a study of dropouts is the choice of an appropriate comparison group. We do not consider it appropriate to contrast high school dropouts with all graduates, since that would include those who ended their education with a high school diploma, those who attended college, those who graduated from a four-year college program, and those who sought post-baccalaureate degrees. We view educational attainment as a continuum, and we think that the most realistic comparison group for dropouts consists of the next point on the continuum—high school graduates who did not go on to college. Our findings confirm the importance of selecting an appropriate comparison group: in most respects, dropouts are not very different from high school graduates who did not enter college, but dropouts are quite different from those graduates who did go on to college.[2]

In comparing the occupational outcomes of dropouts versus high school graduates in their early twenties, we found very little difference between the groups in the *kinds* of jobs they held. On the average, the groups were virtually identical in their job status, hourly wage rates, and subjective sense of job satisfaction. The one critical difference between high school dropouts and graduates lay not in the kinds of jobs they held, but in whether they held any job at all. Being a dropout—lacking a high school diploma—seems to double the risk of being unemployed.

After adjusting for family socioeconomic level, number of siblings, and intellectual ability, the dropouts were still almost twice as likely as graduates to be unemployed. Our findings here are somewhat sharper and stronger than those in Volume III, and they indicate a serious continuing social problem, which we will discuss later.

Other Effects of Educational Attainment. Turning now to the full range of educational attainment, we found that level of education showed very little effect on the hourly wage rates of young men five years out of high school. This lack of effect almost certainly occurs because these young men were in the very early stages of their occupational careers.

There were also few differences in employment rates associated with level of attained education. Excluding high school dropouts, 7.5 percent of the respondents were unemployed. Perhaps more differences among the educational levels would have been evident had the unemployment rate been still higher. Traditionally, the less educated have been most affected by increased rates of unemployment.

Unlike wages and unemployment rates, job status was tied rather closely to educational attainment. In particular, college graduates held the higher status jobs, while there were only rather small status differences among the other educational levels.

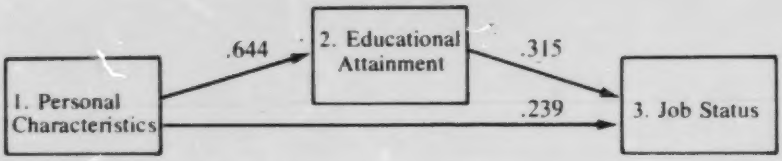
Effects of Various Environments and Experiences. We examined variations in occupational outcomes as a function of a disparate set of environments and experiences, including military service, marital/parental status, urbanicity, region, and county-level labor market conditions. In general, relationships were weak, particularly when a few control variables were introduced. More unemployment was found among veterans, among single respondents, in urban areas, and in the non-South regions. Wages and status varied little, but were highest in the most urban areas.

The Impact of Educational Attainment on Job Status. Our analysis in Chapter 3 included the use of a very simple path analysis to disentangle—at least to some extent—the ways in which occupational status is affected by educational attainment, and the ways in which both are affected by a range of factors which we grouped under the rubric of "personal characteristics." These characteristics include family background, ability, values, attitudes, and early (pre-high school) educational experiences. The basic findings from this analysis are summarized in Figure 10-1.

We concluded from this analysis that the direct impact of educational attainment on job status is probably somewhat stronger than the direct impact of the personal characteristics that we analyzed (because

FIGURE 10-1

Path Analysis of Factors Affecting Job Status



the path from educational attainment to job status— a value of .315—is larger than the path from personal characteristics to job status—a value of .239). This conclusion must be hedged a bit because we judge our measures of personal characteristics—family socioeconomic level, academic ability, values and attitudes—to be incomplete and subject to considerable measurement error. To the extent this is true, the relationships we have observed between these factors and job status are likely to underestimate the true relationships. Thus, if we had error-free measures of all relevant personal characterics we might expect to find much stronger effects on job status. We do not think the same argument can be applied to educational attainment, however, since that measure seems much less open to error. (Unless a respondent is deliberately lying to us, he can tell us quite unequivocally whether he obtained a high school diploma, an associate degree, or a bachelor degree, etc.) Of course, one could argue that our measure of educational attainment is incomplete, since it deals with amount of formal education but not with its quality. That is surely true, but the failure of many studies (including our own, as noted later) to find clear effects attributable to quality rather than quantity of education leaves us doubtful about whether any measure of educational quality would add very much to our prediction of job status.

A second conclusion we drew from our path analysis is that personal characteristics have a greater total impact on job status than does educational attainment. This conclusion follows because we view educational attainment as coming later in the causal stream than the personal characteristics. (Bear in mind that we are referring to personal characteristics measured at the start of tenth grade, and amount of education attained beyond tenth grade.) Given this model of reality, it follows that if there were a way of "improving" those things we have termed personal characteristics, there would be not only a direct but also an indirect impact on job status; the latter would occur because the "improved" personal characteristics would increase the likelihood of having more education which in turn would increase the chances of having a higher status job. (As we noted in Chapter 3, the direct impact of personal characteristics on job status has a path value of .239, the indirect impact has a value of .644 x .315 = .203 , and the two combined produce a total impact of .442.) We thus concluded: If you want to make a difference in occupational status, it is better to get your influence in early. Whatever can be done to raise academic aptitude, interest, and performance *prior to high school* can be expected to have a sort of "double impact" on later occupational status.

Job Satisfaction

Another aspect of occupational attainment is the individual's subjective sense of job satisfaction. We reported in Chapter 4 that 61 percent of our respondents indicated they were very satisfied or quite satisfied with their jobs. This proportion is actually relatively low compared with data from other surveys of older workers.

Does Education Increase Job Satisfaction? For young men in their early twenties the answer, on balance, seems to be No. Our analysis of the several effects of education on job satisfaction indicates that education increases the chances of getting a high status job; and such jobs tend to be rated higher in satisfaction. But education also shows a direct negative impact on satisfaction. Within any given level of job status, the more educated individuals are somewhat less satisfied—presumably because their education has raised their levels of aspiration. The two effects seem just about equal; therefore, they cancel each other, and the net impact of education on job satisfaction is zero. Perhaps after more time has elapsed a clear and predominantly positive impact of education on job satisfaction will emerge; certainly no such pattern was evident five years after high school.

As we commented in Chapter 4, the implications of this finding are neither simple nor straightforward. For many members of the high school class of 1969 the promised effects of education had not—at least not yet—been realized. It seems increasingly clear that the message to future classes should be a more balanced one: the high status jobs are likely to go to the college graduates; but the total number of such jobs seems limited, and this means that some graduates are likely to be disappointed with the jobs they actually find. Higher education still carries a promise; but it also contributes to high aspirations, and thus carries a risk. In the short run, at least, the two effects seem more nearly equal than might have been expected.

Self-Esteem

The self-esteem findings presented in Chapter 5 show a fairly high level of self-evaluation among respondents at the start of tenth grade, with scores then rising gradually over the next eight years to a level one full standard deviation higher. The pattern of findings does not fit any notion that leaving high school produces a sudden and substantial rise in self-regard. Instead, the pattern suggests that the rise in self-esteem may reflect a gradually increasing maturity and the corresponding increases in status, opportunities, and priviliges.

Although there was a substantial upward shift in self-esteem, there was also a good deal of stability in scores from one year to another, that is, the same individuals tended to be high in self-esteem from one year to the next. We estimated the stability for one-year intervals to be about .90. Coupled with the gradual overall rise in self-esteem, this led us to view self-esteem as a relatively enduring dimension of personality. Changes in self-esteem certainly do occur during and following late adolescence, but it seems that most such changes are gradual and developmental rather than revolutionary.

Self-Esteem and Attainment. We found self-esteem to be correlated with aspects of both educational and occupational attainment. As we observed in Chapter 5, the finding that self-esteem is positively related to educational attainment is not surprising. But it is surprising that the relationship was not strongest and clearest at the end of the study, when individuals had sorted themselves into the several levels of educational attainment; instead, the differences were strongest among self-esteem scores obtained at the beginning of the study, apparently "anticipating" educational attainment.

Multivariate analyses indicated that self-esteem during high school had little or no direct causal impact on later educational (or occupational) attainment; the correlations reflect the fact that tenth-grade self-esteem and later attainments share a number of prior causes, including family background, intellectual ability, and scholastic performance. A further key finding is that later measures of self-esteem are less strongly linked with background, ability, and scholastic success. This led us to conclude that, at least among young men who completed high school in the late 1960s, educational success became a less vital part of the self.

While educational attainment seems to have had little direct impact on later self-esteem, the same cannot be said for some aspects of occupational attainment. The status of the respondent's current job was correlated with self-esteem at the end of the study, and that relationship remained largely intact after controls for background, ability, educational attainment, and earlier levels of self-esteem. Another aspect of occupational success, employment versus unemployment, also showed an impact on self-esteem at the end of the study—a difference of about one-third of a standard deviation. Further examination of the effects of unemployment on self-esteem indicated that dropouts were more likely than others to show a disadvantage in self-esteem (a smaller overall increase) as a result of being unemployed. Given the small number of cases involved, we can view these findings as only suggestive. But what they suggest is that the impact of unemployment may be felt most heavily by those who fail to attain a high school diploma. As we speculated in Chapter 5, unemployment may be particularly likely to lead to self-blame among these young men, since their lack of a diploma is something which they are often told that they could, and should, take steps to correct.

Motives, Affective States, Values, and Attitudes

Patterns of change and stability across a wide variety of outcome dimensions were explored in Chapter 7. Here we summarize a few of the most important findings.

Motives, Affective States, and Values. The first four data collections of the Youth in Transition project included measures of needs for self-development and self-utilization, happiness, negative affective states, somatic symptoms, social values, and internal control (personal efficacy). Because of restrictions in questionnaire length, these dimensions were not measured in 1974. As a result, we were unable to examine ways in which these dimensions might have been affected by post-high school experiences. We did, however, examine their stability over four years, as well as their relationships with educational attainment. Similar to self-esteem, these dimensions showed a good deal of stability during the high school years, thus adding further support to the view that changes in personality dimensions during late adolescence are primarily gradual rather than abrupt. A number of the dimensions showed declining correlations with eventual educational attainment—a pattern similar to that found for self-esteem. In particular, need for self-development, need for self-utilization, social values, and internal control showed rather sharp declines in correlations. Measures of happiness, negative affective states, and somatic symptoms did not mimic the self-esteem pattern so closely.

Views about Government. During high school interest in government was higher among the students headed for college, and after college the effect was a bit stronger. Thus much of what might appear to be a "college effect" was actually present in high school, but in this case the relationship seemed to be strengthened by the college experience. Trust in government dropped sharply from 1966 to 1974, an overall trend which mirrored the decline shown in national cross-sectional surveys of adults during that eight-year interval. Some differences in government trust were found to be related to academic major and to military experience. Thus it would seem that interest in political matters, and trust in political leaders, may be influenced by some of the post–high school experiences we have been studying.

Views about Vietnam and the Military. Much of the decline in trust in government was a result of dissatisfaction with U.S. policy in Vietnam. Dissatisfaction increased considerably from 1969 to 1974. Military spending and influence were also viewed with increasing criticism, although the change was not so great as that for Vietnam views. Educational experiences seemed to have some impacts in this area. More sharply critical views about Vietnam and the military were expressed by those who attended college; this was especially true for those who went to "high quality" colleges, and those who majored in the social sciences. Military service also showed an impact on these views: those who had served were less critical of Vietnam policy and more favorable toward the military.

Concerns about Population and Family Planning. Population concern and views about birth control and abortion showed very little change from 1970 to 1974. Generally, the more advantaged respondents, in terms of family background, ability, and level of education attained, were more concerned about population and more approving of making abortion and birth control information available; however, we found no clear evidence that this was a *result* of post–high school educational experiences.

Racial Attitudes. We concluded from our analyses in Chapter 7 that there were modest differences in racial attitudes between those white males in the class of 1969 who went to college and those who did not; however, these differences were largely in evidence by the end of high school, before any socializing effect of college could have taken place. The fact that these differences are not larger, and the fact that they were evident prior to college entrance, may indicate that the widely reported gap in racial values between college and noncollege people is closing. Perhaps the 1970s represent a stage in which the brighter and more able students show more positive racial attitudes before they leave high school, and the attitude gap between educational groups is growing smaller.

Job Attitudes and Aspirations

Status of Aspired Occupation. When asked to indicate what kinds of work they might do for a living, our respondents showed rather high levels of aspiration, on the average. At the start of tenth grade their chosen occupations had a mean Duncan status value of 62 (in contrast to a mean Duncan value of 39 for their fathers' occupations). Five years after high school these aspirations had dropped only slightly to a mean value of 55. Some of that decline is attributable to those who planned in tenth grade to go to college, but did not actually do so (see Figure 5-2).

The overall pattern of occupational aspirations, as reported in Chapter 8, is one of great stability from the start of high school onward. While the respondents may have made frequent changes from one preferred occupation to another, the new occupational choices tended to be similar in status to those preferred earlier. Occupational aspirations also showed stable patterns of correlations with background and ability, as well as with eventual educational attainment. This set of relationships was interpreted in Chapter 8 as indicating that educational attainment plays a substantial role in *maintaining* high occupational aspirations.

The correlations between actual job status in 1974, and occupational aspirations measured at five points in time, show that initial (tenth grade) occupational aims have some predictive value—those with high status aspirations tended to attain higher status jobs ($r = .26$). But the correlation between 1974 job status and 1974 occupational aspirations is much stronger ($r = .45$), thus suggesting that different post–high school job experiences result in substantial changes in long-range aspirations. As Figure 8-2 indicates, those who actually attained fairly high status jobs five years after high school were able to maintain their high long-term occupational aspirations; however, those with lower actual job attainments showed a downward adjustment in long-range aims.

Apparently nothing succeeds like success. More accurately, these findings suggest that those with the higher aspirations (and the more favored backgrounds and abilities, of course) are more likely to reach the higher levels of educational and occupational attainment. In turn, those who reach the higher levels of attainment are more likely to maintain their high levels of aspiration.

Job Attitudes. Respondents' attitudes toward different aspects of jobs were assessed at all five times. Considerable change was evident in some items, while very little change was seen in others. These overall changes in job attitudes were reflected in shifting patterns of relationship with eventual educational attainment. Differences among the educational groups which were evident at tenth grade were diminished and in some instances reversed eight years later. Those with lower levels of attained education became much more willing to take on responsibility, learn new things, and get dirty; they also became more concerned about good pay and job security.

As we said in Chapter 8, we are at a loss as to whether to attribute these changes to the impact of college, the impact of a work environment (for most of those not in college), or other, more general phenomena of noncollege youth "catching up" with those in college. Furthermore, we cannot be sure that our findings for this cohort would be replicated a decade later.

One other relationship with job attitudes is worth noting in this summary. As indicated in Figure 8-6, those who were married (both those who had children and those who did not) showed a greater increase in ambitious job attitudes than those who were single as of 1974. We think this most likely reflects an impact of marriage on job attitudes, but the alternative explanation is also possible. It could be that an increase in ambition after high school makes a young man more likely to marry. As we noted in Chapter 8, the fact that this reverse explanation remains a clear possibility should serve as a caution that even when longitudinal data are available it is often not possible to establish firmly the causal direction underlying a correlation.

Delinquent Behavior and Drug Use

It is interesting to note some ways in which the undesirable or "negative" behaviors of delinquency and drug use are both similar to, and different from, the desirable or "positive" behaviors of educational and occupational attainment. All of these behaviors are considered vitally important for youth and for the nation in general. They are also similar in that they are relatively concrete events that can be reported fairly objectively, and thus they stand in sharp contrast to some of our subjective measures such as self-esteem or job satisfaction. A critical difference between the two sets of dimensions is that educational and occupational attainment measures are really not very meaningful until at least several years after high school, whereas the behaviors of delinquency and drug use can be measured during high school and even earlier. Ironically, it appears that these socially disapproved behaviors provide our best opportunity to study differences and changes in actual behaviors, and to see whether they can be linked to particular environments and experiences during the late teens and early twenties.

Delinquent Behavior. In Chapter 9 we focused on three indexes of delinquency: interpersonal aggression, theft and vandalism, and seriousness of delinquency. All three indexes showed an appreciable drop in scores from 1966 to 1974. Along all three dimensions there is a negative correlation with eventual educational attainment. Multivariate analysis indicated that the different levels of delinquent behaviors, especially interpersonal aggression, shown by those with different levels of education, reflect deeply ingrained patterns of behavior that were fully in evidence as early as junior high school. In particular, it should be stressed that the higher delinquency rates among dropouts were most clearly apparent during the junior and senior high school years. These data fail to support the notion that dropping out causes delinquency; it seems more likely that delinquency is one of the causes of dropping out.

The correlations between delinquency and job status are smaller than those for educational attainment, but they show a similar pattern of consistency over time; accordingly, we concluded that these correlations appear simply because job status is a weak proxy for educational attainment.

Unemployment was one aspect of environment or experience which appeared to have some direct impact on our measure of interpersonal aggression. The effect showed up most clearly for the dropouts who were unemployed—a finding which matches the relatively low self-esteem scores we observed for this group.

On the whole, we concluded that the delinquency differences linked to educational and occupational circumstances in 1974 were largely a reflection of long-standing patterns and were not heavily influenced by the specific post-high school experiences we examined.

Drug Use. The 1970 and 1974 questionnaires included a number of items about the use of illegal drugs, and the use of alcohol and cigarettes. From 1969 (measured retrospectively) to 1974 respondents reported considerable increases in usage rates for alcohol, marijuana, and other illegal drugs. Cigarette use showed rather little change in that period.

The largest drug use difference between those who went to college and those who did not was not in the use of alcohol or marijuana or any other illicit drug. The really big difference was in the daily use of cigarettes—the higher the level of education the lower the likelihood of being a smoker. This was not primarily an effect of post-high school education, however; the differences were present by the time most respondents were seniors in high school. As we noted in Chapter 9, the fact that smoking was much less frequent among young men who got good grades in junior and senior high school, and then went on to college, does not provide us with a clear explanation as to why their smoking rates were lower; but it does suggest one strong possibility. During the last decade there has been increasing evidence, widely reported in the media, pointing to the health hazards involved in smoking. It seems likely that those young men who are more successful in school are also more likely to read and take seriously such reports.

Alcohol use showed a negative correlation with educational attainment, but the strength of that relationship declined from 1969 to 1974. The illegal substances showed very little relationship with education. The fact of simply going to college or not showed little relationship to the use of illegal drugs. But the major program of study elected in college did show a correlation with the use of illegal drugs. In particular, humanities and arts majors were more likely to be users of illegal drugs. The differences among academic majors were considerably less for tobacco and alcohol.

Job status and employment (versus unemployment) showed rather little relationship with alcohol and cigarette use. But the data indicated that failure to find a job may contribute to illegal drug use.

The findings with respect to marriage suggested that being married may "tone down" the excesses of young men in their early twenties. Single men tended to increase substantially their use of alcohol and illegal drugs from 1969 to 1974, while married men showed much less of an increase.

Assessing the Impacts of Environments and Experiences on Delinquent Behavior and Drug Use. We summarized and interpreted our findings in Chapter 9 as indicating again that educational attainment, and the related dimension of occupational status, are *correlates* more than *causes* of differences among young men. Educational attainment is linked to delinquency, cigarette use, and alcohol consumption. But in each case the findings suggest that the differences in behavior preceded the sorting out by level of education. Thus the more accurate interpretation is that young men with high rates of delinquency, cigarette use, and alcohol use are less likely to reach high levels of educational attainment.

We do have some evidence of other factors having a causal impact on these behaviors. Specifically, it appears that unemployment may contribute to aggression and drug use, while marriage may tend to reduce such behaviors. Young men unemployed in 1974 reported fully twice as much interpersonal aggression and illicit use of amphetamines, barbiturates, and hallucinogens as did those who were employed. The earlier measures showed much smaller differences between those who were, and were not, unemployed by 1974. During junior and senior high school, those who married and became fathers by age 23 were well above average in interpersonal aggression; but five years later they were very similar to the rest of the sample in mean level of aggression. In the area of drug use, there were few differences during high school between those who soon married and those who did not, but by the fifth year after high school the proportions of single men using marijuana and/or other illicit drugs were half again as large as the proportions of married men.

Does unemployment really heighten aggression and drug use? Does marriage actually tend to "reform" some overly aggressive individuals, and does it decrease the likelihood of drug use? Our findings in this area are suggestive, but not definitive. In each case an alternative path of causation is possible. Increases in aggression and drug use in the years following high school may contribute to unemployment and decrease the likelihood of marriage. But the fact that we are dealing with different patterns of *change* in behaviors, rather than stable differences in behaviors, leads us to favor an explanation in terms of environmental/experiential impact.

The Failure to Find Differential High School Effects[3]

The preceding sections have summarized the findings reported in this volume. One of our primary emphases has been to explore the possible effects of different *amounts* of education, ranging from less than high school to post-baccalaureate study. As have other researchers, we have found among young men substantial differences associated with different quantities of education—although the causal interpretation of such differences remains complicated.

Another and somewhat separate area of emphasis in educational research has been the study of differences in educational quality rather than quantity. For more than 10 years social researchers have been employing increasingly sophisticated techniques of data collection and analysis in an effort to discover the special characteristics of the so-called good schools. A secondary, but quite important, purpose of the Youth in Transition project was to contribute to this area of research. The results of our research on differential high school effects have been spelled out in detail elsewhere (Bachman and O'Malley forthcoming; L. Johnston, 1973a). A brief summary will be useful here, because findings in this area bear some relationship to our discussion of policy issues and implications for education.

Since the Youth in Transition project involved a nationally representative sample of 87 public high schools, and since it included repeated data collections through the high school years in order to measure change, it appeared to provide an ideal opportunity to study differential high school effects. Moreover, the broad range of variables measured—including self-esteem, motivation for self-development, attitudes about jobs, and the like—meant that our search for differences in high school impacts would cover a wider range of outcomes than most other studies.

We recognized from the start that some, perhaps most, differences among the students attending different high schools would be traceable to earlier differences and/or background factors—the "input characteristics" of the students. Nevertheless, we hoped and expected that our longitudinal design plus detailed measurement of background and ability factors would permit us to separate such factors in order to isolate those school effects which were genuine. Because we wanted to learn the causes for any such school effects, the project also collected extensive data about the characteristics of participating schools. Information was provided by all principals, as well as by counselors and samples of teachers. (See L. Johnston, 1973a, for a full description of these measures.)

The findings from a decade or more of careful research by other investigators exploring school effects have been singularly discouraging. Whatever dimensions of effectiveness have been considered—improvement in test scores, post-high school educational attainment, occupation accomplishments, etc.—the most effective and the least effective schools have not been very different in their impacts. (See Averch, Carroll, Donaldson, Kiesling, and Pincus, 1974, for a summary and evaluation of these research findings.) Moreover, schools which may appear more effective along one dimension are likely to be only about average along other dimensions (Averch et al., 1974; Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, and York, 1966; Comber and Keeves, 1973; Jencks and Brown, 1975; Purves, 1973; Thorndike, 1973).

What have been the findings of the Youth in Transition project in this area?

> It would be deeply satisfying at this point to be able to report that we had indeed isolated substantial and significant school effects, and that we had discovered certain school characteristics which were linked to such effects. Unfortunately, that is not what we are able to say. Instead, we must report that our basic conclusion is rather similar to the conclusion drawn from other careful attempts to discover school effects: we have not uncovered differential school effects consistent and substantial enough to provide any clear guidance for the improvement of public high schools in the United States.
>
> *What sets the present study apart from earlier work is that this failure to find differential high school effects is not limited to the more typical dimensions of test scores, or educational and occupational aspirations and attainment. On the contrary, our inability to find important differential school effects extends across a broad array of criterion dimensions—especially those noncognitive dimensions which have sometimes been seen as the more promising domains for discovering school effects.* Moreover, our search for school effects involved a relatively exhaustive set of school measures. Some 1600 descriptors of schools—many of them aggregated from data provided by 20 or 30 teachers and/or students within each school—were explored, refined, and consolidated in an effort to find those sets of school characteristics which would show a differential impact on students (Bachman and O'Malley, forthcoming).

The summary statements above capture both the substance and flavor of our findings on differential high school effects. Now the question remains: Given the widespread finding that student outcomes cannot clearly be attributed to differences in *quality* of schooling, how can that finding be reconciled with the equally widespread finding that *quantity* of schooling does seem to have important impacts on student outcomes? This set of contrasting findings, which Meyer (1977, p. 60) has called "the most puzzling general research paradox in the sociology of American education," is one of the key issues addressed in the discussion of policy issues and implications for education which follows.

Change and Stability in Young Men

More than anything else, the Youth in Transition project has been a study focused on change. The opening words of Volume I, written a decade ago, were: "Adolescence is a time of change, a time of transition." The scope of the project has since been extended beyond its earlier design to include young adulthood as well as late adolescence. Attitudes, aspirations, self-concepts, and behaviors were expected to be particularly sensitive to change as a result of various social environments. Repeating the same measures of many of these dimensions in all five data collections has provided us with a unique opportunity to examine different groups—some of which cannot be identified until after high school—to see whether the differences we find among such groups of young men can be traced to different experiences during their late teens and early twenties.

We have found a good many differences among these groups; but to a large degree, we have found such differences to be relatively stable. In other words, it appears that individuals who are different initially tend to seek out different experiences and environments.

Contrary to what might have been expected by those who view adolescence as a period of great turbulence and stress, we have found a good deal of consistency along dimensions of attitudes, aspirations, and self-concept. Others have also found continuity and stability in the transition from mid-teens to early adulthood (Offer and Offer, 1975; Symonds, 1961). As Offer and Offer observed: "As they matured, the adolescent subjects of these investigations retained an overall consistency of psychological and behavioral functioning despite changes in environmental circumstances, family constellations, and work experience" (1975, p. 181).

This is not to say that there were no changes at all. Our findings on illegal drug use suggest effects of two different social environments: marriage seems to reduce drug use, and unemployment seems to increase it. Our findings on long-range occupational aspirations also show effects of post-high school experiences: educational and occupational success sustain high aspirations, whereas many of those with lesser attainments show a (presumably realistic) decline in occupational aspirations from the high levels of tenth grade. These findings, and others summarized above, indicate that people do change in response to environmental circumstances and experiences.

Nevertheless, the dominant picture that emerges from this research is not change but stability. Again and again, with respect to attitudes, aspirations, self-concepts, and behaviors, we found that differences correlated with different experiences in the late teens and early twenties generally pre-dated the actual experiences.

Policy Issues and Implications for Education

This volume has been concerned with the causes and consequences of a number of post-high school environments and experiences, but certainly the primary attention has been devoted to educational experience. This seems entirely appropriate, given the public attention and investment focused on education, and given also the fact that education is strongly associated with later occupational success. Now, in the remaining portion of this chapter, we try to interpret the linkage between education and occupational outcomes in the light of research findings, and then we explore some implications for educational policy.

How is Education Linked to Occupational Success?

The present research, as well as a good deal of other research, has shown that educational attainment, particularly the attainment of a college degree, is strongly linked to occupational success—at least when success is defined in terms of job status. At the other end of the educational continuum, it is well established that high school dropouts are less successful than average—with the lack of success in this case defined as a high rate of unemployment. A third dimension of occupational success, hourly wages, does not show a clear association with the educational attainments of young men in their early twenties; however, it is clear from other research that in the longer run there is a positive relationship between education and income. Still another dimension of occupational success, job satisfaction, shows a more complicated linkage with education, because higher levels of education contribute to higher job aspirations and expectations. On balance, then, we can say that education is clearly linked to several aspects of occupational success.

How shall we account for these relationships between educational attainment and occupational success? No doubt there are several causal processes at work, and the relative importance we attach to each can have important implications for educational policy. In our attempt to understand the several bases for the education-success relationship, it will be useful to consider at least three ways in which the more highly educated individuals are, on the average, different from the less educated. First, those individuals who seek out more schooling are different in what are sometimes called *input characteristics*: prior to high school they display above-average levels of ability, motivation, family background, etc., all of which presumably contribute to later occupational success. Second, those who go further up the educational ladder are exposed to a wider range of *socialization* experiences: the actual knowledge, as well as the attitudes and values instilled by the educational process directly increase the likelihood of successful performance in high-level jobs. Third, higher levels of education provide better *credentials*: the possession of diplomas and degrees, above and beyond any initial or acquired skills and abilities, can make a key contribution to occupational success.

Socialization Theory versus Allocation Theory. The popular view of education as the pathway to success lays great stress on the socializing role of education. But an alternative view of the impact of education, sometimes termed allocation theory, offers quite another explanation of the education-success relationship. In a recent essay on "The Effects of Education as an Institution," Meyer (1977) distinguished sharply between traditional socialization theory and allocation theory. Because this distinction will help us to put our findings and their implications into clearer perspective, we will refer to Meyer's paper at several points in this discussion.

The traditional socialization view, which Averch et al. (1974) termed the "input-output model" of school effects, is that schools "process" students in various ways. Or as Meyer put it,

> Schools provide experiences which instill knowledge, skills, attitudes, and values in their students. These students then have a revised and expanded set of personal qualities enabling them to demand more from, and achieve more in, the role structure of modern society (1977, pp. 56–57).

This view of schools as "socialization factories," if you will, was a basic factor in the design of the Youth in Transition project, and it has shaped many of our analyses, particularly the analyses of change presented in Chapters 5 through 9. It is an optimistic view of individuals and society which holds that those who seek success can go to school and learn the skills, attitudes, etc., that are necessary for success. True, differences in background, ability, and motivation may make such educational endeavors easier or more likely for some individuals than for others, but that does not seem to be a dominant theme in the socialization view.

A very different interpretation of the relationship between education and success is offered by allocation theory:

> . . . people in modern societies are allocated to adult roles on the basis of years and types of education, apart from anything they have learned in schools. Education is thus more a selector, sorter, and allocator than it is a socializer.
>
> Education, in allocation theories, is a set of institutional rules which legitimately classify and authoritatively allocate individuals to positions in society (Meyer, 1977, pp. 58–59).

Two things happen in the educational process, according to allocation theory. One is that different individuals are sorted and selected to receive different amounts of formal education, and this sorting must be done on the basis of *differences in student input characteristics.* Some of the relevant differences presumably include motivation or ambition, ability to delay gratification, capacity to pay (or have family pay) for higher education, as well as some degree of academic ability. The other thing that happens according to allocation theory is that the diplomas and degrees associated with different levels of formal education have *different credential values.* These educational credentials are assumed to play a vital part as individuals enter the job market, but the impact does not stop there. "On the basis of their education, individuals are expected to treat themselves, and others are expected to treat them, as having expanded rights and competencies. Given allocation rules, educational labels are of the greatest significance for the social identity of individuals" (Meyer, 1977, p. 60).

Are the advantages of educational attainment attributable to the credential value of education alone, quite apart from any differences in background, ability, and other input characteristics? Or do the apparent advantages of education simply reflect the fact that more able (and more likely to succeed) individuals happen to acquire more formal education—that is, is education only a symptom of initial differences rather than a cause of success? There is no reason to require that we choose only one of the two causal dynamics contained within allocation theory; on the contrary, it seems much more plausible to suppose that both operate. It also seems plausible that at least some of the socialization effects attributed to education do, in fact, occur. Then the question becomes one of deciding the relative importance of each of these causal patterns.

How Much Can Be Attributed to Input Differences, Socialization, and Credentials? What insights can we draw from our present research findings as we try to discover the relative importance of the three causal interpretations outlined above? Let us list several key findings, in each case noting their implications:

1. Differences in the background, ability, and aspirations of tenth graders are strongly predictive of later educational attainment. This set of findings is quite consistent with the notion that the educational system sorts out individuals according to input characteristics that are likely to contribute to later success.

2. Amount of education predicts job status and retains much of its predictive value after controlling for background, ability, aspirations, etc. This evidence suggesting that there is some "value added" by education, above and beyond the correlated background and ability factors, could be interpreted in one of three ways: the added value of education could result from its socialization effects, its credential effects, or some combination of both. In order to distinguish between socialization and credential effects, we must turn to other kinds of evidence.

3. The Youth in Transition project is particularly well-suited to provide evidence of changes in values and attitudes occurring during the period when some individuals are acquiring further education while others are not. If those who went to college, for example, had changed in ways different from those who did not, we would have been inclined to interpret such changes as evidence for the socialization theory. Along nearly all of the dimensions we studied, however, we found that differences related to educational attainment were actually rather stable, and the distinctions existed prior to the different educational experiences. These data support a "sorting" or allocation explanation. (It may be worth a reminder that if we were limited to data obtained *after* the sorting into educational levels, we would not be able to make such a distinction between the two alternative theories. This is exactly the problem faced in most cross-sectional studies of the effects of different levels of educational attainment, and is a problem also faced by our own research when we deal with occupational outcomes linked to education.)

4. Another kind of evidence from the Youth in Transition project involved the search for differential high school effects—evidence that students may be "socialized" differently in different high schools. As we stated earlier, our own efforts to find some schools more "effective" than others were fully as disappointing as the efforts of other researchers. We noted that Meyer found "the most puzzling general research paradox in the sociology of American education" to be the fact that although the amount of education has shown substantial effects on all sorts of outcomes, outcome variations among schools are very small. But Meyer considered the paradox understandable on the following

terms: "If schools have their socializing effects as ritually chartered organizations . . . rather than as organized collections of immediately socializing experiences, then all schools of similar ritual status can be expected to have similar effects" (1977, p.60).

In sum, our finding of prior differences among those who later attained different levels of education and occupational success is consistent with the input differences aspect of allocation theory. Our evidence for the "value added" effects of educational attainment, coupled with the lack of clear evidence for socialization, suggests the considerable importance of education as a credential. Finally, it is worth stressing that we could not find clear evidence for school socialization effects despite the fact that the Youth in Transition project was perhaps uniquely suited to demonstrate such effects, at least along the so-called noncognitive dimensions.

This evidence for the credential value of education, and the lack of clear evidence for the socializing effects of education, leaves us with a rather unfinished feeling. Therefore, in the final pages of this book we will speculate about why we, and so many other researchers, have failed to find evidence for school socializing effects. We will also consider some new directions and emphases in education which seem related to our research findings.

Why Has Research Often Failed to Find Convincing Evidence of School Socialization Effects?

Before trying to answer this fundamental question, let us clarify its meaning. First, we are not asserting that school socializing effects do not occur. That would be nonsense. *At the level of specific training for specific competencies*, educational institutions from kindergarten to advanced professional schools certainly contribute to learning on the part of their students. Thus, if we had employed a different set of criterion measures we could easily have found evidence of socialization; if we had used before-and-after measures of skill in algebra, typing, and perhaps even poetry composition, we would have found greater gains among students who had taken courses in these areas. If our research had focused attention on students taking specialized training in engineering, architecture, dentistry, medicine, etc., we could have measured gains in knowledge that would be clear evidence for school socialization effects. These examples illustrate a key point: some of the socializing effects of education are so obvious that they scarcely need formal research to document them. Who would seriously argue with the proposition that for most of the present population of the United States the ability to read resulted (to a considerable degree, at least) from the efforts of the elementary schools to socialize them—to develop that particular skill? Who would disagree that the professional skills of engineers, architects, dentists, and physicians are, particularly in the early years of their practice, heavily influenced by the specific training that occurred in their professional schools? Surely we can agree that schools can, and very often do, provide socialization in the form of specific knowledge, skills, and competencies.

But it has been asserted that education has much broader socializing effects, that it has far-reaching impacts on a wide range of outcomes including occupational attainment, self-esteem, and delinquent behavior, to name only a few. We have already noted the obvious effects of education in the occupational training of some professionals, but most people do not hold jobs which require several years of formal technical or professional training. For the majority of people in the majority of jobs, the payoff value of education must be considered at a broader and more general level. It is at this broader level of impact that we and other researchers have generally failed to find clear evidence of educational socialization, so it is at this level that we must ask, Why?

Lack of Sufficient Variation in Elementary and Secondary Educational Experiences. Much of educational research deals with natural experiments. The researcher looks for "independent variables"—in this case they would be educational experiences which vary from one individual to another—then the researcher tries to measure "dependent variables" which will show the effects of the different educational experiences. But if everyone has similar experiences, if the dimension selected to be the independent variable does not actually vary, then a relationship cannot be demonstrated. This does not mean that there is no effect. It simply means that no differential effect has been uncovered. Possibly in a number of the most important areas of education researchers cannot isolate and measure enough systematic variation in experience to permit a relationship to be demonstrated.

Consider the problems involved in demonstrating differential effects of early educational experiences. Although we suspect that early educational experiences are more important than later ones (see Chapter 3), it is hard to find clear variations in early educational exposure which might then permit us to detect differential outcomes. The amount of early formal education is fairly similar for virtually all children in the United States—no one drops out of elementary school and very few drop out of junior high school. (Variations that may exist in pre-kindergarten amounts of education are confounded with parental characteristics such as socioeconomic level.) The quality of early education may vary significantly from one classroom to another, but most children pass through a series of classrooms; therefore, by the time they have finished elementary school they have been exposed to a variety of teaching styles, and the overall effects cumulated or averaged over a number of years may not show nearly as much variation as the effects of particular teachers—if, indeed, it were possible to isolate such effects of teachers (Luecke and McGinn, 1975).

Even at the high school level there has been little success in demonstrating differential school effects. It may be that our efforts directed toward universal education and equality of educational opportunity have been more successful than we have realized, and perhaps this is one of the keys to understanding the lack of differential high school effects. As Nichols put it, " . . . the very fact that education is so widespread and so obviously successful may reduce its importance as a source of individual differences in ability in this country" (1976, p. 87).

Certainly there is a great deal of effort directed toward making educational environments equally effective. If some new educational approach appears successful in a few schools, it is likely to be tried out in many other schools. Indeed, as we noted earlier, the hope of many educational researchers has been to discover what characterizes "effective" schools, and then encourage other schools to employ similar methods. The result of such a process of discovery and dissemination would be a further leveling of school differences.

This is not to argue that there are no differences among high schools—in their size, their architecture, their student populations, their faculty morale, etc. But much more striking are the similarities in patterns of course offerings, laboratories, libraries, classrooms with blackboards and rows of seats, masses of students moving from class to class at fifty-minute intervals, hallways lined with lockers, and so on. The networks for disseminating educational innovations, as well as state and local requirements for equal educational offerings and opportunities, have helped bring us to a point at which it seems fair to argue that public schools are more similar than different.

Does this mean that schools are ineffective? Not at all. An appraisal offered several years ago is equally appropriate now:

> In retrospect, the overall lack of differential school effects is not necessarily proof that schools are generally ineffective. It could just as well indicate that our schools, in conjunction with aspects of our culture, are succeeding in making equally rich educational opportunities available to nearly all who desire them. Perhaps a more realistic conclusion involves a balance between these two interpretations. Public schools show a great deal of similarity with one another, and this applies both to their areas of strength (e.g., academic preparation for college) and their areas of weakness (e.g., vocational preparation and placement). Thus, it is not a matter of discovering which *schools* are the effective ones, but rather one of locating those *areas* in which most or all

> schools are ineffective, and then developing ways to improve them (Johnston and Bachman, 1976, p. 308).

The Overwhelming Importance of Nonschool Factors. Another reason for the general failure to find evidence of broad school socialization effects is that factors outside the school may be so much more important. Averch et al. (1974) reviewed a considerable amount of evidence indicating the great importance of family socioeconomic level. They also summarized a number of hypotheses which had been offered to account for this—explanations including possible genetic differences, differential learning opportunities in the home, and differences in motivation toward education.

Beyond the home, there are many other institutions and forces that contribute to socialization. The media, in particular, have displaced the school in recent years as the primary window to the world for young people (Coleman, 1972). Other institutions can sometimes compensate for particular differences or deficiencies in some formal school settings. "Thus, for example, if a cutback in the school budget wipes out a program in individual instrumental music, at least some of the students affected will compensate by taking private music lessons; if the art budget is reduced, more students may take art courses at the 'Y' " (Johnston and Bachman, 1976, p. 308).

The fact that nonschool factors are important does not mean that schools are precluded from having impacts, or differential impacts. But it does raise the possibility that nonschool factors may "swamp" the effects of differential school practices. Given this possibility, Averch et al. commented: "Are our educational problems school problems? The most profitable line of attack on these educational problems, under this hypothesis, may not be through the schools at all" (1974, p. 177).

Limitations in Research Measures and Procedures. Educational research has involved a great deal of methodological conflict and criticism (Cohen and Garet, 1975). We have already pointed out some of the most serious problems in research design, particularly the problem that much educational research must rely on natural experiments, and there is often not enough variation "in nature" to demonstrate differential school socialization effects. Other criticisms of educational research have focused on the quality of measures, the use of statistical controls in general, and the controls for family background in particular. We have dealt with each of these issues in detail elsewhere (Bachman and O'Malley, forthcoming), and will simply note our conclusions here. The dimensions studied by educational researchers, especially the noncognitive dimensions, often have measurement problems; nevertheless, the research in this volume demonstrates that many of our measures show meaningful relationships with a variety of factors (including the amount of education that different individuals seek and attain). The problems of statistical controls are complex, but usually the danger is that we do not control enough and thus attribute to education some effects which (given better controls) would properly be credited to background and/or ability. We concluded, therefore, that these criticisms apply to some of the findings some of the time, but the consistent lack of clear evidence for differential school socialization effects cannot be written off as the fault of research designs and procedures.

Research on Amount of Education Is Usually Based on "After-Only" Designs. It is clear that those who seek and attain greater amounts of education become advantaged in occupational outcomes and a variety of other respects, including levels of political and economic information, community activity and involvement, and of course social status (Withey et al., 1971). Hyman, Wright, and Reed (1975) recently amassed an extensive amount of data indicating that individuals with higher levels of education are also more knowledgeable, across a wide range of topic areas, than are the less educated. Hyman and his colleagues announced the firm conclusion that " . . . education produces large, pervasive, and enduring effects on knowledge and receptivity to knowledge" (p. 109).

We would not quarrel with the assertion that the better educated are both more knowledgeable and more receptive to new ideas and information. But we do have reservations about concluding that such differences are convincing evidence of school socialization effects. We agree with the criticism made by Astin (1976) in his review of the volume by Hyman and associates: the limitations of cross-sectional or "after-only" measures of differences linked to education cannot adequately control for initial differences. Attempts at controls can be made, and the better the measures of background and ability that are available, the more convincing will be the arguments about such controls. Nevertheless, the dangers are great that not enough of the right variables will be controlled adequately.

We have already noted this problem at several points in this volume, yet it is so central to this discussion that it seems worthwhile to offer one further illustration from our own data. Let us suppose that we are limited to data collected from young men aged 23; then we would find that self-esteem is correlated .14 with educational attainment. Although the association is not strong, it is statistically significant ($p < .001$) as well as theoretically important; it suggests that education may have a modest positive impact on self-esteem. Of course, it is still possible that the correlation indicates that people with more favored backgrounds and/or higher academic ability have higher self-esteem (and also tend to get more education). But if we obtain measures of family background and academic ability, we can introduce statistical controls; instead of a zero-order correlation of .14 we would then have a standardized regression coefficient (beta) of .113—still statistically significant and theoretically important. In other words, controlling family background and ability scarcely weakens the association between educational attainment and self-esteem among young men in their early twenties.

But the trouble with that analysis, even with good statistical controls for background and ability, is that it does not control enough of the appropriate earlier factors. In this case, it does not control early levels of self-esteem. If we extend our analysis to control background, ability, and self-esteem during the high school years, then we find that the association between educational attainment and later self-esteem is reduced to a trivial beta value of .025. Thus it becomes clear that education is associated with slightly higher self-esteem because high school students with above-average self-esteem are more likely to go to college (see Chapter 5).

The point of this brief return to the self-esteem analysis is to emphasize the point that some education-related differences among individuals can "masquerade" as "educational effects" even when some controls for background and ability are introduced. Longitudinal analyses, such as those presented in Chapters 5 through 9, are a substantial improvement (although even then we have no guarantee that the controls will be altogether adequate).

This should not imply that research on educational effects is a hopeless undertaking, but it does suggest greater caution—particularly with designs based only on after-the-fact measures. Thus, we would prefer that the conclusion cited from the report by Hyman and associates had been stated in terms that were more open to a variety of causal interpretations: Different amounts of education sought and attained *are associated with* large, pervasive, and enduring differences in knowledge and receptivity to knowledge.

Given that link between education and knowledge, our own view is that three causal processes are all involved to some degree:

1. Those individuals who start out as better readers, more interested in knowledge, etc., are more likely to seek and gain admittance to further education.

2. Increased amounts of education are likely to have socializing effects which include an increase in present knowledge as well as the development of interests and skills that will contribute to future levels of knowledge.

3. The credential value connected with education, through its impact on occupational attainment as well as general community status, will make an additional contribution to accessing and retaining knowledge.

How much of the relationship is strictly a result of the socializing effects of education? It cannot be determined precisely, and we would assert that the present state of research findings does not even give us a good rough approximation. What does seem clear is that not all, perhaps not most, of the positive outcomes *correlated* with amount of education can be said to be *caused* by the socializing effects of education.

New Directions and Emphases in Education

One of our fondest hopes in launching the Youth in Transition project was that we would uncover educational practices in some schools and/or some programs which were clearly above average and which could be recommended for the improvement of other schools. Such policy implications were not forthcoming from the research. Instead, we found that different students attend different schools, and seek and attain different amounts and different kinds of education. Nevertheless, such findings do have policy implications, albeit more complicated and perhaps less satisfying than those we sought.

Ending the Anti-Dropout Campaign. As noted earlier, a special focus of the Youth in Transition project has been to distinguish between the causes and consequences of dropping out of high school. Volume III in this series was devoted largely to the basic question, Does dropping out really change anything? That volume, based on data extending to one year after most graduated from high school, concluded that " . . . dropping out does not change things a great deal—at least not in ways that are apparent by the time a young man reaches the age of nineteen or twenty" (p. 175). Now, based on longitudinal research extending four years further, the impression of rather little change as a result of dropping out can be extended at least to age 23 or 24.

The self-esteem of dropouts was slightly lower than that of high school graduates in 1974, but it had been lower in 1966 as well. This finding belies expectations that dropouts must surely suffer increasing losses in self-esteem as a result of their public failure to complete high school. Instead, their self-esteem increased considerably from 1966 to 1974, at just about the same rate as shown by the graduates. The occupational aspirations of dropouts were also a bit lower than graduates in 1974, but the differences had been greater in 1966. Delinquency also showed a pattern of relatively stable differences between groups; dropouts were higher in 1974, but the differences were actually less than in 1966. Along all of the dimensions mentioned above, dropping out appeared to have had rather little effect. Another set of dimensions, occupational attitudes, did show some small changes in relationship, however. For example, the dropouts became relatively more concerned about having a good paying job. But this is by no means a negative effect of dropping out; it probably realistically reflects the dropout's more precarious position in the labor market. We conclude that there are very few negative effects of dropping out other than the previously discussed, and very important, risk of unemployment. To the extent that dropouts are disadvantaged, the dropping out is largely a symptom, not the cause, of their problems.

What implications derive from this conclusion? Certainly one implication is that exhorting potential dropouts to stay in school in order to get a *better* job is likely to be misleading. Five years after graduation, those who ended their education with a high school diploma did not have noticeably better jobs than dropouts in terms of status, pay, and job satisfaction. They did have better chances of avoiding unemployment. Another implication is that the majority of high school dropouts are probably no better or worse as employees than are those whose education stopped with a high school diploma. If they were, presumably there would be discernible differences in status and wages. But if most dropouts are just as good employees as high school graduates, then why do dropouts have the much higher unemployment rate? There are two possible alternatives.

1. Some dropouts simply lack the abilities and/or motivation to work. The same qualities which led them not to finish high school lead them to fail to find or keep jobs.

2. Jobs are harder to find for dropouts. Since the credential of a high school diploma is a requirement for many jobs which dropouts could perfectly well perform, this alternative is a very likely possibility.

Both alternatives are probably true to some extent. Surely some dropouts are misfits: they were unable to fit well into educational institutions and they do not fit well into occupational institutions either. But many others need not be considered misfits. Whatever the reasons that the educational environment did not provide a congenial fit, it does not follow that dropouts in general could not fit into an occupational environment. Indeed, our data indicate that many dropouts do find the occupational environment to their liking.

We believe that dropouts are often victims of discrimination in the job market. Some employers who require a diploma for jobs are discriminating on the basis of a credential which may not be truly indicative of the applicant's potential as an employee. Of course, some proportion of dropouts who are really misfits may be screened out effectively by the requirement of a diploma, but we would argue that the costs are too great.

Forcing every young person to stay in school through twelfth grade in order to help in screening for employment is not an efficient screening mechanism for the society as a whole. For one thing, the sheer cost of educating everyone for twelve years, when ten years might suffice very nicely for many, is extravagant. For another, by keeping in school individuals who basically do not fit in well with educational institutions, we needlessly make life much more difficult for everyone else in the school. Both teachers and serious, willing students suffer from the enforced presence of individuals who have little or no positive incentive to be in school, and the experience of staying in school is considerably unpleasant for the potential dropouts who react to an environment they dislike by doing little but wasting time and causing problems for others. The views expressed in Volume III seem equally applicable now, based on our follow-up data five years after high school graduation:

> . . . The campaign against dropping out seems based on the assumption that everyone needs at least twelve years of formal education. But the research reported here has led us to question that assumption. We have found that some young men can manage reasonably well on the basis of ten or eleven years of education. Perhaps others would do so if they were not branded as "dropouts."
>
> Certainly there are alternatives to a twelve-year diploma; perhaps one based on ten years would be sufficient. Young people wishing to enter college might spend the years equivalent to grades eleven and twelve in publicly-supported college preparatory academies. Others might enter one-year or two-year vocational training or work-study programs. . . . Still other young people might choose to go directly into the world of work after their tenth-grade graduation—some to return to part-time or full-time education after a year or two or three.
>
> In a world of rapidly changing technology with its emphasis on continuing education and periodic retraining, there is less and less reason to maintain the traditionally sharp boundary between the role of student and the later role of worker. Shortening the prescribed minimum period for full-time uninterrupted schooling might be a positive step toward new patterns of lifetime education in which individuals can choose for themselves among a wide range of "educational life-styles." If such changes would reduce the credential value attached to high school diplomas, all the better. One of the unfortunate side effects of the anti-dropout campaign has been the tendency to confuse education with credentials; any step in the opposite direction could have a salutary effect on our whole educational establishment (pp. 181–82).

Moving to Alternative Forms of Credentials. More and more in recent years the credential value of education seems to have taken precedence over the supposed socialization value. The phenomenon is not limited to the campaign to persuade would-be high school dropouts to "hang in there and get that diploma." At the other end of the educational continuum, the Ph.D. is seen as a "union card" not just for academic jobs but for many other jobs outside of academia. It can be argued that this growing emphasis on schools as sources of credentials more than socialization has impaired their effectiveness in both respects.

Perhaps one of the problems in studying the correlates of education and then drawing implications—particularly implications for counseling individuals—has been a failure to take a broad system perspective. The ecologists' observation that it is impossible to do just one thing would seem to apply here. Historically, credential value may have become attached to education largely because education really did signify socialization. But given that correlation, the conclusion was drawn that if individuals wanted to "do better" they should get more education. Then increasing emphasis was placed on the degree, the credential, rather than on the content of the educational experience.

If the above speculations are sound, one could argue that among the implications of urging the young to gain better educational credentials have been: 1. an increase in the number, and proportion, of individuals who reach each level of educational attainment; 2. some reduction in the quality of ability, knowledge, and performance represented by each such level; and 3. a decrease in the relative payoff value of each educational level and credential. In other words, educational credentials are a currency subject to a lot of inflation. There seems to be a growing awareness of this inflation and a new caution about the payoff value of education. If the credential value of education is reduced—eroded by the new caution about educational payoffs and/or replaced (at least partially) by alternative forms of credentials—one of the most desirable side effects may be that educational institutions can focus greater attention on the socializing functions for which they were designed.

We think that some shifting away from grades, years of schooling, and diplomas as credentials would have a positive effect on both students and schools. One potential advantage of reducing the "credentialling" function of the schools is that it would reduce an unfortunate kind of adversary relationship between students and teachers. Under present conditions the quest for grades has a game-like quality. Some teachers, in an attempt to be fair, take great pains to explain the "rules of the game" so that students who are motivated to get good grades will know how to do so. But even under those conditions a student sometimes feels the need to try to persuade the teacher to award a higher grade, make some special allowance, etc., so that the student can gain the credential perceived as necessary to make it to the next step on the educational ladder. Some teachers who "grade on the curve" turn grading into a zero-sum game; the rules of this game are such that one student's gain must be at the expense of another student—hardly a situation to promote cooperation and helping among students.

Of course there also are instances when the need to achieve a certain level of performance on some assignment or test proves to be a (mostly) constructive motivating force. We think it is possible to reduce the emphasis on classroom grades and still make use of the positive motivation to do well on tests and assignments. Moreover, we think that the motivation to acquire credentials can be harnessed more constructively if the credentials are seen as sensible and functional.

In this regard we view the current interest and experimentation in competency testing as a healthy step. System-wide, or even state-wide, tests for specific skills and competencies can dramatically change the old adversary relationship between student and teacher. The teacher becomes a helper and guide for the student trying to become well prepared for the examination. The student provides much of the task-motivation rather than relying on the teacher to do so. At least in those subject areas for which it is appropriate, competency testing could lead to reduced emphasis on classroom grades—perhaps even their elimination.

What about other areas of schooling that are not readily adapted to competency testing? We would agree that art appreciation, music history, and a variety of other culturally enriching courses in high school and college are less appropriate for competency testing. But, by the same token, we think they are also inappropriate as bases for credentials in the job market. Thus, we believe that an across-the-board deemphasis on classroom grades coupled with the selective use of competency testing would result in better credentials and, as a side effect, much better working relationships for both students and teachers.

Less Time, More Options. That phrase is the title of a special report and recommendations published by the Carnegie Commission on Higher Education in 1971. The Commission proposals included: a reduction in length of time spent in undergraduate college education; a reduced emphasis on certification through formal higher education; more mixing of work and study throughout a lifetime; a wider range of options that would include alternatives to deferring college, "stopping out" for a while to gain experience and changing directions. The Commission concluded that if these and other recommended reforms were accomplished, then "Formal education would absorb less of the time of students and less of the resources of society, and it would, at the same time, serve better both the interests of the students and the needs of society. We need more paths and more rates of progress to individual self-fulfillment and to service to society"(1971, pp. 31–32).

Many of the Commission's recommendations need not be limited to education at the post–high school level. Indeed our own suggestions offered in Volume III and quoted earlier in this chapter call for similar changes at the high school level. More recently, a similar perspective was reflected in *Youth: Transition to Adulthood*, a report issued in 1974 by the Panel on Youth of the President's Science Advisory Committee, chaired by James Coleman. The panel stressed the needs of young people to take on more real responsibilities, to interact with people across a broader range of ages and circumstances, and to expand their work-role experiences. The panel reached the conclusion that the best way to meet such needs was to *decrease* the time that young people spend in formal educational settings. The panel recommendations included a variety of ways in which school and work could be alternated, including half-time schooling coupled with half-time employment. This work-study pattern is not new, of course, but the panel recommended that it be pursued by a large proportion of high school students, not just those who need to learn a skill because they are not headed for college. A related recommendation is that school personnel also act as "agents of the young," and seek out opportunities for work-role experience in the larger community. Again, this is not a totally new idea, but the panel proposed that it be carried out on a much larger scale, that it include government support for the costs incurred by the "host" organizations in the community, and that it be coupled with a reduction of time spent in traditional classroom settings.

The recommendation that young people spend less time in formal school setttings should not be taken as a criticism of schools. Rather, it is a reaction against requiring too much of the schools. This point was made clearly by the Panel on Youth:

> Schools are the principal formal institutions of society intended to bring youth into adulthood. But schools' structures are designed wholly for self-development, particularly the acquisition of cognitive skills and of knowledge. At their best, schools equip students with cognitive and noncognitive skills relevant to their occupational futures, with knowledge of some portion of civilization's cultural heritage, and with the taste for acquiring more such skills and knowledge. They do not provide extensive opportunity for managing one's affairs, they seldom encourage intense concentration on a single activity, and they are inappropriate settings for nearly all objectives involving responsibilities that affect others. Insofar as these other objectives are important for the transition to adulthood, and we believe they are, schools act to retard youth in this transition, by monopolizing their time for the narrow objectives that schools have (Coleman et al., 1974, p. 146).

The changes proposed by the Panel on Youth " . . . are intended to break that monopoly, through environments that complement schools." Thus the proposals " . . . address the objectives that schools omit, by proposing institutional structures that aid these objectives" (Coleman et al., 1974, p. 146).[4]

Our present findings may be seen as consistent with these views expressed by the Panel on Youth. It seems that recently too much has been expected of formal schooling, and too much has been claimed for it. Schools may not be very likely to produce the broad socializing effects that have sometimes been claimed. Rather than assuming or demanding such effects, and then viewing the lack of such effects as evidence of school failure, perhaps we should develop a reduced and more realistic set of expectations for schools. Students, educators, and the rest of society could all be the beneficiaries.

Notes

[1] We could account for considerably more variance in educational attainment if our predictive equation included college plans measured at the end of twelfth grade. However, most young men (and young women) who go to college have made and received rather firm commitments by the end of their senior year in high school. Thus, our twelfth-grade measure of college plans, which correlates .67 with later educational attainment, might better be termed a measure of college arrangements.

[2] A commentary made in Volume III of this series seems relevant:

> The basic thrust of the "anti-dropout campaign" seems to be this: Stay in school long enough to get your high school diploma—your chances of "making it" will be much better. But if the really important educational threshold is college entrance rather than high school graduation, then the "stick it out until the end of high school" approach is highly deceptive. One could argue, of course, that graduating from high school is a prerequisite for college entrance, and the "finish high school" message is a necessary first step. In our view that argument misses the point in at least two ways. First, the idea of college usually is not even mentioned in anti-dropout commercials. Yet it would seem foolish to persuade a potential dropout to stick it out just to the end of high school and then fail to tell him that he *really* ought to be gearing up for college. Second, even if potential dropouts were clearly shown that college is the real issue, their limitations in ability, past school performance, and attitudes toward school make them very poor prospects for a successful college experience. There are exceptions to this general pattern, and some high school dropouts later go on to do very well in higher education. But these are indeed the exceptions, and it seems unwise to build our policy around them (p. 174).

[3] This section is largely abstracted from a fairly extensive paper reporting our search for school effects (Bachman and O'Malley, forthcoming).

[4] It is beyond the scope of this volume to provide a more extensive summary of the proposals by the Panel on Youth. For a more detailed presentation see Coleman et al., (1974, pp. 145–175), and also Heyneman's (1976) summary and commentary upon the debate which has been stimulated by the Panel on Youth report.

Appendix A

GLOSSARY

This appendix defines the variables used in this report. In most cases, the definition ends with a number or numbers from 1 to 5, separated by slashes; these indicate the times at which the variable was measured. Some of the variables indicate the specific question(s) from the Time 5 (1974) questionnaire, which is reproduced in Appendix G. For example, 5QF1 refers to the Time 5 questionnaire, section F, question number 1. In general, variables have been scored so that higher values indicate a greater degree of whatever the variable name indicates; in other words, high values scored on self-esteem indicate greater self-esteem. Complete lists of items included in the various indexes can be found in earlier *Youth in Transition* volumes, particularly Volumes I and II (1967 and 1970), and a number of the measures are described in detail in this volume (see Index).

Ability composite. Mean of respondent's standardized scores on three tests of intelligence (the Quick Test of Intelligence, section J [vocabulary] of the General Aptitude Test Battery, and the Gates test of reading comprehension. See **Quick Test, GATB-J Vocabulary test, and Gates reading test**). 1

Abortion disapproval. "A woman should be permitted to have an abortion at any time during the first three months of pregnancy." 1=agree; 2=mostly agree; 3=mostly disagree; 4=disagree. 4/5 (5QJ28)

Academic achievement value. An index of four items that indicate the extent to which the respondent considers it to be "a good thing" to demonstrate behaviors indicative of academic achievement. The items are: "studying constantly in order to become a well-educated person; working hard to achieve academic honors; striving to get the top grade-point average in the group; studying hard to get good grades in school." Scale: 1.0=low (it is a "very bad thing" to do); to 6.0=high in academic achievement value (it is a "very good thing" to do). 1/2/3

Alcohol use 1–6. Question asks respondent how often he has used alcoholic beverages (for other than medical purposes) during part or all of the last year. 1=never; 2=once or twice a year; 3=3–10 times a year; 4=once or twice a month; 5=once or twice a week; 6=nearly every day. 3/4/5

Ambitious job attitude. Summary index of amount of job ambition, derived by subtracting the **job that doesn't bug** score from the **job that pays off** score and adding a constant. Scale: 1.00=low to 7.00=high. 1/2/3/4/5

Average grade: 9th, Yr 1;

Average grade: 10th, Yr 2;

Average grade: 12th, Yr 3. Respondent reported his average grade for all his courses for the year. 10=failure (E or F), 59 percent or less; 22=D– (60–62); 25=D (63–66); 28=D+ (67–69); 32=C– (70–72); 35=C (73–76); 38=C+ (77–79); 42=B– (80–82); 45=B (83–86); 48=B+ (87–89); 52=A– (90–92); 55=A (93–96); 58=A+ (97–100).

Black: integrated school=1. Based on the determined region of respondent's residence and the determined racial composition of respondent's high school. 0=respondent did not attend integrated (more than 10 percent white) school; 1=respondent attended integrated school. 1

Black: segregated school, north=1. Based on the determined region of respondent's residence and the determined racial composition of respondent's high school. 0=respondent did not attend Black segregated (less than 10 percent white) high school in the North; 1=respondent attended Black segregated high school in the North. 1

Black: segregated school, south=1. Based on the determined region of respondent's residence and the determined racial composition of respondent's high school. 0=respondent did not attend Black segregated (less than 10 percent white) school in the South; 1=respondent attended Black segregated school in the South. 1

Cigarette use. See **daily cigarette use**.

Classroom grades. See **average grade**.

College mean ACT score. Variable consists of Scholastic Aptitude Test composite scores (i.e., verbal plus mathematical), or American College Test composite scores, or estimates of these scores. All institutional means were converted to the equivalent ACT mean score as described in Astin (1971). (These data were obtained from J.N. Morgan and Greg Duncan, 1975.) 5

College plans? Yes=1. Respondent was asked a series of questions about his future plans; if he replied he would go to college or graduate school in answer to any one of the questions, he was coded as having college plans. 0=no college plans; 1=college plans. 1/2/3

College status ranking. Indicates the prestige of having attended a particular institution as an undergraduate; a measure of the social status associated with an institution and not of the educational quality of the institution.

1=two year public schools and four-year unaccredited schools; accredited schools administered by lower-status religious groups, such as Assemblies of God, the Nazarenes, and Seventh Day Adventists; 2=lower-prestige public teachers' colleges and their social equivalents among private colleges; 3=higher-prestige public teachers' colleges and their social equivalents among private colleges; 4=lower-prestige land-grant agricultural and mechanical colleges and their social equivalents among private colleges, as well as other public schools; 5=higher-prestige land-grant agricultural and mechanical colleges and their social equivalents among private colleges, as well as other public schools; 6=lower-prestige state universities and their social equivalents among the private colleges; 7=higher-prestige universities and their social equivalents among the private colleges; 8=high quality private colleges and a few very prestigious public institutions. (These data were provided by J.N. Morgan and Greg Duncan, 1975.) 5

Crowne-Marlowe social desirability. See **need social approval**.

Curriculum: college preparatory=1. At Time 1 and Time 2, respondent reported his present program of high school study; at Time 3 he reported his present program if he was still attending school or the propram he had taken if he had stopped going to school. 0=vocational, business, general, agricultural, or other; 1=college preparatory. 1/2/3

Daily cigarette use=1. Variable is based on a question asking respondent how often he smoked cigarettes during the last year. 1=nearly every day; 0=less than daily use. 3/4/5

Delinquent behavior in school. A mean of seven items measuring the amount of school-oriented delinquent behavior. Included are questions on how often respondent has been suspended, damaged school property, and gotten into a serious fight at school (see *Youth in Transition* Vol. III [1971], p. 94 for complete list of items). Scale: 0.00=never to 4.00=five or more times. 1/2/3

Desired family size. See **ideal number children**.

Does best work in school. "How close do you come to doing the best work you are able to do in school?" 1=not at all close; 2=not very close; 3=somewhat close; 4=quite close; 5=very close. 1/2

Drug use: amphetamines, barbiturates, LSD. A mean of three items asking how often during the past year respondent had used amphetamines, barbiturates, and LSD for other than medical purposes. 1=never; 2=once or twice a year; 3=3 to 10 times a year; 4=once or twice a month; 5=once or twice a week; 6=nearly every day. 3/4/5

Duncan score for job status. See **job status, Duncan**.

Education attained, 1–8. A variable constructed from a number of items relating to amount of education received, including questions on the type of school attended (5QA10–5QA14; 5QE7), the number of years of schooling completed (5QE4), whether or not respondent was a high school dropout at Time 4, the highest degree earned (5QE3), and the dates of most recent enrollment at the last school attended after high school (5QE6). Scale: 1=high school dropout; 2=high school graduate with no further post-high school education; 3=high school graduate with some vocational or technical training; 4=high school graduate with some two-year college; 5=high school graduate with some four-year college; 6=high school graduate with an associate degree; 7=high school graduate with a bachelor degree; 8=high school graduate with some graduate school. 5

Employed? Yes=1, No=0. The employed category includes respondents who said they were working for pay at a full time or part-time job (5QA1a) or said they were mostly working on a job (5QA2) *and* who indicated they were working between 1 and 98 hours per week (5QC2). The unemployed category is comprised of those who said they were on temporary lay-off from work, looking for work, or waiting to report to work (5QA1), or who said they were mostly unemployed (5QA2). 1=employed; 0=unemployed. 5

Employment status. See **employed? yes=1, no=0**.

Extrinsic school motivation. See **negative school attitudes**.

Family socioeconomic level. See **socioeconomic level**.

Father's education. "How many grades of school did your father complete?" 1=less than high school; 2=some high school (9–11 years); 3=some high school plus noncollege training; 4=completed high school (12 years); 5=completed high school plus noncollege training; 6=some college; 7=completed college; 8=post-graduate degree. 1

Father's occupation. Occupation recoded to Duncan status score. (See **job status, Duncan**.) 1

Flexibility. A mean of 17 items taken from the California Personality Inventory. 1.00=low flexibility; 2.00=high flexibility.

GATB-J vocabulary test. Score on part J (vocabulary) of the General Aptitude Test Battery. Score is number of items answered out of 60. Taken at Time 1 only. (See *Youth in Transition*, Vol. I [1967], pp. 68–69 and Vol. II [1970], p. 47). Maximum score for sample was 44. 1

Gates reading test. Gates Test of reading comprehension taken at Time 1. Score is number correct. Perfect score is 43. (See *Youth in Transition*, Vol. I [1967], p. 67, and Vol. II [1970], p. 47.) 1

Government should end discrimination. A mean composed of three items asking the respondent how strongly he agrees or disagrees that the government should take a role in racial issues. For example, "It is not the government's business to pass laws about equal treatment for all races." Scale: 1.00=disagree to 4.00=agree. 3/4/5

Grade failure. See **repeated grade=0, not=1**.

Grades. See **average grade**.

Happiness. Six questionnaire items were combined to form a very simple index of happiness. Five of the items were positive: "I generally feel in good spirits;" "I am very satisfied with life;" "I find a good deal of happiness in life;" "I feel like smiling;" "I feel happy." There was one negative item "I feel sad." (See *Youth in Transition*, Vol. II [1970], p. 132.) Scale: 1.00=never happy to 5.00=almost always happy. 1/2/3/4

Hourly pay rate. Respondent's hourly wage, if given (5QC3). If hourly wage not given, pay rate was calculated using the number of hours worked per week (5QC2) and the weekly (5QC3a) or monthly (5QC3b) pay rate. 5

Hours of homework See **number of hours homework**.

Ideal number of children. "All things considered, if you could have exactly the number of children you want, what number would that be?" Actual number (8=eight or more). Scale: 0 to 8. 4/5

Impulse to aggression. A mean of the following four items: "I feel like swearing;" "I feel like losing my temper at people;" "I feel like being a little rude to people;" "I feel like picking a fight or arguing with my parents." Scale: 1.00=never true to 5.00=almost always true. 1/2/3/4

Interest in courses. "How interesting are most of your courses to you?" 1=very dull; 2=slightly dull; 3=fairly interesting; 4=quite interesting; 5=very exciting and stimulating. 1/2/3

Interest in government. "Some people think about what's going on in government very often, and others are not that interested. How much of an interest do you take in government and current events?" 1=no interest at all; 2=very little interest; 3=some interest; 4=a lot of interest; 5=a very great interest. 1/2/3/4/5

Internal control. A mean of items adapted from the Rotter internality scale measuring to what degree the respondent perceives he controls his own fate versus the perception that he is controlled by outside events. In one item, for example, the respondent would choose one of the following: "(2) What happens to me is my own doing; (1) Sometimes I feel that I don't have enough control over the direction my life is taking." 1.00=low internal control; 2.00=high internal control. 1/2/3/4

Interpersonal aggression. A mean of six or eight items which ascertains how often respondent hit, fought, or hurt other people, including relatives, teachers, and students. The interpersonal aggression index is a mean of eight items for Times 1, 2, 3, and 4. At Time 5, two items were dropped because they were less appropriate for the sample, who were then adults. Therefore the Time 5 version is a mean of six items. Since the deleted items (Hit your father; Hit your mother) had very low incidences, the index is not greatly affected by their exclusion. As a check, the Times 1 to 4 indexes were recomputed, using only six items; in each case the new six-item version correlated at least greater than .97 with the old eight-item version. In this report we have used the eight-item version for Times 1–4 and the six-item version for Time 5. (See Table 9-1 for complete list of items.) Scale: 0.00=never to 4.00=five or more times. 1/2/3/4/5

Intrinsic school motivation. See **positive school attitudes**.

Job characteristics (actual). Thirteen items which asked the respondent to rate the extent to which various characteristics were represented on his job. The same characteristics were asked of the job the respondent would *like* to have [see **job characteristics (ideal)**]. (See Table 4-3 for complete list of items.)

Job characteristics (ideal). Thirteen items which asked the respondent to rate how important various job characteristics were for him. See **ambitious job attitude**. (See Table 8-2 for complete list of items.)

Job satisfaction. "All things considered, how satisfied are you with your work experience on your present (or most recent) job?" 1=not at all satisfied; 2=not very satisfied; 3=somewhat satisfied; 4=quite satisfied; 5=very satisfied. 5 (5QF1 with scale reversed)

Job status, Duncan. A socioeconomic status rating of occupations developed by O.D. Duncan (1961). It is based on prestige ratings for job titles in the 1947 NORC prestige study and data on income and education for the occupations in the 1950 Census. (Some examples of the scores assigned to occupations are: railroad laborer, 03; bartender, 19; machinery operator, 22; plumber, 34; locomotive fireman, 45; clergyman, 52; accountant, 78; architect, 90. Scale: 01=low to 96=high status. 5

Job that doesn't bug me. A mean of seven job characteristics having to do with the tendency to avoid many things associated with job ambition, such as hard work, long hours, responsibility (see Table 8-2 for complete list of index items). The respondent indicated the importance of each characteristic. Scale: 1.00=low importance for a job that doesn't bug (high ambition) to 4.00=high importance for a job that doesn't bug (low ambition). 1/2/3/4/5

Job that pays off. A mean of six items which ask how important each job characteristic is to the respondent (see Table 8-2 for a complete list of items). A ranking of high importance implies a good deal of job ambition. Scale: 1.00=low job ambition to 4.00=high job ambition. 1/2/3/4/5

Lives with both parents=1. Based on 1966 questions asking whether respondent's natural parents are alive, whether he lives with his own mother and father, and whether his parents are divorced or separated. 0=home broken by death or divorce; 1=home intact. 1

Marijuana use. Question asks how often respondent used marijuana (for other than medical purposes) during part or all of the last year. 1=never; 2=once or twice a year; 3=3–10 times a year; 4=once or twice a month; 5=once or twice a week; 6=nearly every day. 3/4/5

Marital/parental status. See **married? yes=1, no=0; married parent=1; married nonparent=1.**

Married nonparent=1. Based on question asking for respondent's marital status (5QJ1). 0=single, married with one or more children; 1=married with no children (divorced and separated with or without children assigned missing data). 5

Married parent=1. Based on question asking for respondent's marital status (5QJ1). 0=single, married with no children; 1=married with one or more children (divorced and separated respondents with or without children assigned missing data). 5

Married? Yes=1, No=0. Based on question asking for respondent's marital status (5QJ1). 0=unmarried respondents (including divorced and separated); 1=married respondents. 5

Military influence. See **prefer more military influence**.

Military service=1. Based on series of questions (Section D of the Time 5 questionnaire) concerning respondent's military service. 0=respondents with no military service; 1=respondents who served in the Armed Forces (not including Reserves, National Guard, Coast Guard, or ROTC, who were assigned to missing data on this variable). 5

Mother's education. "How many grades of school did your mother complete?" See **father's education** for codes. 1

Need self-development. A mean derived from respondents' self-ratings to 15 questionnaire items (See *Youth in Transition*, Vol. II [1970], pp.111, 114) designed to measure the need for self-development, such as: "When I learn something new, I like to set a goal for myself and try to reach it;" "I look for opportunities to better myself;" "I would be unhappy in a job where I didn't grow and develop;" "If I had to lower my goals because I just couldn't make it, that would really hurt." (See *Youth in Transition*, Vol. I [1967] for complete list of items.) Scale: 1.00=low need for self-development to 5.00=high need for self-development. 1/2/3/4

Need for self-utilization. Questions similar to those comprising need for self-development were asked concerning use of one's existing skills and abilities. An eight-item measure of need for self-utilization asks questions such as: "I wish I had more chance to use some of my skills;" "I'd like to bring my usual performance in line with the best I've ever done;" "It upsets me when I get worse at something I was once good at;" "I am afraid that if I don't keep in practice I will lose my skills." (See *Youth in Transition*, Vol. I [1967].) Scale: 1.00=low need for self-utilization to 5.00=high need for self-utilization. 1/2/3/4

Need for social approval. A mean of 31 items adapted from the Crowne-Marlowe social desirability scale, to which respondent replies "true" or "false" to indicate his reactions to a variety of social attitudes and situations. For example: "I am always careful about my manner of dress;" "There have been occasions when I felt like smashing things;" "I like to gossip at times;" "I am sometimes irritated by people who ask favors of me." 1.00=low need for social approval; 2.00=high need for social approval. 1

Need for social approval (approach). A mean of 11 items having to do with approach behaviors, subsetted from **need social approval**. 1

Negative affective states. This variable is a grand measure of the negative affective states dimension measured in six indexes: **irritability** (7 items); **general anxiety** (7 items); **anxiety and tension** (5 items); **depression** (6 items); **anomie** (8 items); **resentment** (7 items). The value for this cluster is a mean of the means of the six index ingredients. Scale: 1.00=low negativity to 5.00=high negativity. 1/2/3/4

Negative school attitudes. A mean of eight items indicating the respondent's negative or avoidance attitudes toward school; statements such as "Instead of being in this school, I wish I were out working" and "I feel the things I do at school waste my time more than the things I do outside of school" were rated (see *Youth in Transition*, Vol. II [1970], p. 108 for a complete list of items). Scale: 1.00=low negativity (education has high value) to 4.00=high negativity (education has low value). 1/2/3

Number books in home. "How many books are in your home?" 1=none, or very few (0–10); 2=a few (11–25); 3=one bookcase full (26–100); 4=two bookcases full (101–250); 5=three or four bookcases full (251–500); 6=a room full; a library (501 or more). 1

Number of hours of homework. "About how many hours do you spend in an average week on *all* your homework including both in and out of school?" 1=no hours; 2=1 to 4 hours; 3=5 to 9 hours; 4=10 to 14 hours; 5=15 to 19 hours; 6=20 to 24 hours; 7=25 or more hours. 1/2/3

Number of possessions in home. See **possessions in home**.

Number of rooms per person. See **rooms per person in home**.

Number of siblings. Sum of number of brothers and number of sisters. Actual number coded (7=7 or more). Scale: 0 to 7. 1

Number of years of schooling. "How many years of schooling have you completed?" 1=10 years; 2=11 years; 3=12 years; 4=13 years; 5=14 years; 6=15 years; 7=16 years; 8=17 years or over. 5

Occupational aspirations. See **status of aspired occupation**.

Occupational attitudes. See **ambitious job attitudes: job characteristics (ideal)**.

Parental punitiveness. Index of 10 items in which the respondent rated his parents on how often they did such things as: "take away your privileges," "threaten to slap you," "yell, shout, or scream at you," "disagree about punishing you," etc. Scale: 1.00=never to 5.00=always. 1

Participant in 1970=1. Panel members who responded at Time 4 coded 1; nonrespondents coded 0. 4

Perceived discrimination. A mean of three items asking the respondent how many blacks he thinks miss out on good jobs, housing, and schooling because of racial discrimination. Scale: 1.00=none at all to 4.00=many. 3/4/5

Personal efficacy. See **internal control**.

Political alienation. See **trust in government**.

Population concern. A mean of six items measuring respondent's concern about overpopulation and his perception of what an ideal population size would be for the United States and for the world. Scale:

1.00=low concern about overpopulation to 5.00=high concern about overpopulation. 4/5

Positive family relations. A mean of 21 items having to do with parental punitiveness, closeness to parents, and the feeling that parents are reasonable. (See *Youth in Transition*, Vol. II [1970], pp. 17–21 for list of items.) Scale: 1.00=low positive family relations to 5.00=high positive family relations.

Positive school attitudes. A mean of 15 items which stress the intrinsic value of education, for example, "Education has a high value because knowing a lot is important to me;" "I believe an education will help me to be a mature adult." (See *Youth in Transition*, Vol. II [1970], p. 107 for a complete list of items.) Scale: 1.00=low (education has little value) to 4.00=high (education has high value). 1/2/3

Possessions in home. An index which sums the number of items from a list of 19 which the respondent indicates he had in his home (including such things as a television, a dictionary, a car, a dog, a daily newspaper, etc.). Scale: 0–19. 1

Prefer more military influence. A mean of the following two items: "Do you think military personnel have too much or too little influence on the way the country is run?" and "Do you think the United States spends too much or too little on the military?" Scale: 1.00=military has far too much influence, or United States spends far too much, to 5.00=military has far too little influence, or United States spends far too little. 3/5

Program of study. See **curriculum: college preparatory=1.**

Quick test. This is a test of intelligence taken at Time 1, in which the respondent chose from a group of pictures one which best defined a word. Score was a point for each word correctly identified; highest possible=150. Test authors are Ammons and Ammons; it is discussed in detail in *Youth in Transition*, Vol. II (1970), pp. 47–62. 1

Race. See **black: segregated school, south=1; black: segregated school, north=1; black: integrated school=1.**

Racial attitudes. See **government should end discrimination; social distance (race); perceived discrimination.**

Raised on farm=0, not=1. Based on question asking respondent where he was (mostly) brought up. 0=respondent brought up on a farm; 1=respondent not brought up on a farm. 1

Rebellious behavior in school. A mean of 13 items in which respondent indicated how often he did such things as "argue with your teachers," "goof-off in class," "skip classes," "cheat on tests," etc. Scale: 1.00=never to 5.00=almost always. 1/2

Region: North Central=1. Based on the determined region of respondent's residence. 0=respondent lived in the west, northeast, or south region; 1=respondent lived in the north central region. 1

Region: Northeast=1. Based on the determined region of respondent's residence. 0=respondent lived in the west, north central, or south region; 1=respondent lived in the northeast region. 1

Region: South=1. Based on the determined region of respondent's residence. 0=respondent lived in the west, north central, or northeast region; 1=respondent lived in the south region. 1

Region: West=1. Based on the determined region of respondent's residence. 0=respondent lived in the north central, northeast, or south region; 1=respondent lived in the west. 1

Relative job ambition. See **ambitious job attitudes.**

Repeated grade=0, not=1. "Were you ever kept back a grade?" 0=Yes; 1=No. 1

Rooms per person in home. Number of rooms in home divided by number of people in home. 1

Satisfaction with own school work. "How satisfied are you with the way you're actually doing in school?" 1=not at all satisfied; 2=not very satisfied; 3=somewhat satisfied; 4=quite satisfied; 5=very satisfied. 1/2

School ability. See **self-concept school ability**; **does best work in school**; **works harder than average**, **satisfaction with own school work**.

School mean GATB-J. High school's mean GATB-J score (see **GATB-J vocabulary test**) computed from the scores of all the Time 1 respondents at that school. 1

School mean Gates. High school's mean Gates score (see **Gates reading test**) computed from the scores of all the Time 1 respondents at that school. 1

School mean Quick Test. High school's mean Quick Test score (see **Quick test**) computed from the scores of all the Time 1 respondents at that school. 1

School mean S.E.L. High school's mean socioeconomic level computed from the combined S.E.L.'s of all the Time 1 respondents at that school. 1

Self-concept school ability. An index of three items in which respondent rates himself in comparison to others his age on overall school ability, reading ability, and intelligence. Scale: 1.00=far below average to 6.00=far above average. 1/2

Self-esteem. A mean of six items adapted from the Rosenberg scale and four from the Cobb scale. The respondent rated himself on such questions as: "I feel that I'm a person of worth, at least on an equal plane with others" and "I am able to do things as well as most other people." Scale: 1.00=low self-esteem to 5.00=high self-esteem. 1/2/3/4/5

Seriousness of Delinquency. A mean of 10 items which refers to the frequency of the more serious delinquent acts asked (see Table 9-1 for complete list of 10 items). The "seriousness" items include "set fire to someone else's property on purpose;" "hurt someone badly enough to need bandages or a doctor;" "taken something not belonging to you worth over $50;" "used a knife or gun or some other thing (like a club) to get something from a person." Scale: 1.00= never to 5.00=five or more times. 1/2/3/4/5

Siblings. See **number of siblings.**

Social desirability. See **need social approval.**

Social distance (race). A mean of three items asking the respondent how much he would mind having close contact with people of a different race, for example: "If a family of a different race (but same level of education and income) moved next door to you, how would you feel about it?" A high score indicates a large social distance. 3/4/5

Social values cluster. A composite measure designed to tap values that are highly approved in the United States. This variable is a mean of the means of the following six indexes: **honesty** (7 items); **kindness** (4 items); **reciprocity** (7 items); **self-control** (5 items); **social responsibility** (4 items); **social skills** (6 items). Scale: 1.00=low approval of social values to 6.00=high approval of social values. 1/2/3/4

Socioeconomic level. A summary index consisting of six equally weighted components: father's occupational status; father's educational level; mother's educational level; number of rooms per person in home; number of books in home; checklist of other possessions in the home. (See *Youth in Transition*, Vol. II [1970], Appendix B for detailed description.) These factors relate to the quality of home environment (but do not rule out factors of genetic endowment). Scale: 1.00 to 8.00. 1

Somatic symptoms. A mean based on an 18-item checklist of physical complaints, including such questions as: "Have you ever had spells of dizziness?", "Are you ever bothered by nightmares?" Scale: 1.00=never to 5.00=always. 1/2/3/4

Status of aspired occupation. The Duncan status rating of the job the respondent thinks he might do for a living, 5QG1. (See **job status, Duncan.**) 1/2/3/4/5

Test anxiety. A mean of 14 true/false items, adopted from the Mandler-Sarason Test Anxiety Questionnaire, measuring how anxious respondent gets about tests and exams. For example, "I freeze up on things like intelligence tests and final exams;" "I usually get depressed after taking a test." 1.00=low test anxiety; 2.00=high test anxiety. 1/2

Theft and vandalism. A mean of nine items which measure the number of times respondent has commited acts of theft or vandalism. (See Table 9-1 for complete list of items.) Scale: 0.00=never to 4.00=five or more times. 1/2/3/4/5

Trust in government. A mean of three items measuring the extent to which the respondent trusted the government not to waste money, to do what is right, and to be run by capable people. (See *Youth in Transition,* Vol. II [1970], p. 152 for items.) Scale: 1.00=low trust to 5.00=high trust. 1/2/3/4/5

Trust in people. A mean of three items in which the respondent chooses between statements indicating faith or lack of faith in other people. For example, respondent would choose between: "1. Most people try to be helpful; 2. Most people are just looking out for themselves." 1.00=low trust; 2.00=high trust. 1/2/3/4

Urbanicity. See **raised on farm=0, not=1** and **urbanicity 1–4**.

Urbanicity 1–4. Based on respondent's description of the place he lives. 5QA4. 1=rural community or small town or city of fewer than 50,000; 2=medium sized city (50,000–100,000) or suburb of medium sized city; 3=fairly large city (100,000–500,000) or suburb of fairly large city; 4=very large city (over 500,000) or suburb of a very large city. 5

Vietnam dissent. A mean of six items, three anti-Vietnam war items and three items that could be termed "pro-Vietnam war." The mean score across the six items was used to classify respondents according to their views on the Vietnam war. Scale: 1.00=support for U.S. policy in Vietnam to 4.00=disagreement with U.S. policy in Vietnam. 3/4/5

Wages. See **hourly pay rate**.

Works harder than average. "How hard do you think you work in school compared to the other students in your class?" 1=much less hard; 2=less hard; 3=about average; 4=harder; 5=much harder. 1/2

Appendix B

SAMPLING AND STATISTICS

As reported in *Youth in Transition*, Vol. I (1967, pp. 21–24, 123–129), the sample for this study was selected in three stages. Stage one consisted of the Survey Research Center's national sample of counties and metropolitan areas selected from each of 88 strata. Stage two involved selecting one school from each such county or metropolitan area. (In one area several attempts were unsuccessful in locating a school willing to participate; therefore, it was necessary to omit this area and proceed with 87 schools.) Finally, stage three consisted of randomly selecting about 25 boys from each school.*

Given this type of clustered and stratified sample design, it is not appropriate to apply the standard, simple random sampling formulas to obtain estimates of sampling errors. The use of these formulas will almost always understate the actual sampling errors.

One measure of this understatement is the design effect (DEFF). For each sample estimate, the design effect is the square of the ratio of actual standard error to the expected standard error of the estimate from a simple random sample of the same size:

$$\text{DEFF (sample estimate)} = \left[\begin{array}{l} \textit{actual standard error of the estimate} \\ \textit{expected standard error of the estimate} \\ \textit{if the sample were simple random of the} \\ \textit{same size.} \end{array}\right]^2$$

For most of the *simple means* in this report, our estimates suggest that design effects will be under three.

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*An earlier version of this appendix was written by Martin Frankel, Sampling Section, Survey Research Center. We are grateful to Leslie Kish and Irene Hess for developing the sampling procedure used in this study.

We recommend that an assumed value of DEFF = 2.8 be used in computing standard errors for the proportions (p) presented in this report. Estimate s.e. (p) by

$$(1)\quad \text{s.e.}(p) = \sqrt{\frac{\text{DEFF}\,p(1-p)}{N}} = 1.7\ \frac{p(1-p)}{N}$$

Although the clustered nature of the data collection (sampling) introduces correlation between observations, we feel that the sampling error of a difference between two proportions p_1 and p_2, based on subclass sizes of N_1 and N_2, respectively, may be conservatively estimated as

$$(2)\ \text{s.e.}(p_1-p_2) = \sqrt{\text{DEFF}\left[\frac{p_1(1-p_1)}{N_1} + \frac{p_2(1-p_2)}{N_2}\right]}$$

$$1.5\sqrt{\frac{p_1(1-p_1)}{N_1} + \frac{p_2(1-p_2)}{N_2}}$$

Even when design effects for simple means are rather large, there exists a good deal of evidence to indicate that design effects for more complex statistics (e.g., regression and MCA coefficients, correlation coefficients, MCA etas and betas) are significantly lower (Kish and Frankel, 1970; Frankel, 1971). An appropriate estimate of the design effect for the present study is around 2.25.

With a design effect of 2.25, the value of the product-moment correlation needed to be significantly different from zero at *p* = .05 is about .074. The following table presents estimates of the standard errors for *r*:

Value of *r*	Estimated Standard Error (N = 1600, DEFF = 2.25)
.10	.037
.15	.037
.20	.036
.30	.034
.40	.032
.50	.028

With only two categories in an independent variable, the eta value required for significance at the .05 level is equal to that required for *r*, since in that case *r* is equal to eta. The following table shows the required values of eta for two, five, and eight categories, and also indicates the corresponding eta values if the sampling were simple random.

Eta Value Required for Significance at $p = .05$, $N = 1600$:

Number of Categories	Simple Random Sampling	Clustered Sampling (DEFF = 2.25)
2	.049	.074
5	.077	.116
8	.094	.141

The reader is cautioned against using these standard errors for computing precise significance levels or confidence intervals. These standard errors as well as the necessary normal distributional assumptions are only approximations.

Appendix C

PANEL BIASES

Repeated Measurement Effects

One of the sources of bias in a panel study is that participation may have some effect on the respondents. "Panel conditioning" or repeated interview effects can best be examined by drawing an independent sample from the population and comparing their responses to those of the panel. The original design of the study included a provision to do this. In 20 of the schools in the probability sample, a supplementary random sample of 10 to 15 boys per school was drawn in 1966, following the same procedures used in selecting the original sample in each school. This control sample consisted of 248 boys in 20 schools. The names and addresses of these boys were recorded and filed, but no contact of any kind was made to indicate this selection to the boys.

For each school providing control group subjects, we assume that initially there were no systematic differences between the control subjects and those selected for full participation. Therefore, any significant differences in response between the control group and the main panel of respondents can properly be attributed to some aspect of the experience of participating in the study.

In April 1970, the control sample was contacted for the first time, through a letter inviting them to join the study. At that time we decided to restrict the data collection to control sample members who had not moved from their 1966 addresses. Of the 248, 105 had moved by 1970, making the effective sample 143; 115 (80.4 percent) of this sample were actually interviewed, the remainder having refused. To the extent possible, the interview session for control group members was exactly the same as for all other respondents. A very few questions required rewording because they referred to previous experience in the study.

The responses of the final control sample of 115 were compared with those of panel members from the same 20 schools. Because those who had moved were systematically excluded from the control sample, they were also excluded from the corresponding panel. The final panel comparison group was 340.

There were a great variety of dimensions on which comparisons could be made. Fully 104 variables were examined to see whether significant differences appeared between the two groups; t-tests were used in all but three cases where chi-square tests were used. The variables included virtually all of the major dimensions measured at Time 4 (1970). Exactly five of the 104 variables tested showed differences which were statistically significant with probability less that .05.* Since we would expect to find about five significant differences purely by chance, and since there was no obvious pattern to the variables which showed some significant differences, we conclude that the survey responses of panel members showed no effect from repeated interviewing, and that this source of bias can be ignored.

Panel Attrition Effects

In assessing the importance of panel attrition, the major comparison of interest was between the original group of 2,213 respondents, and the retained group of 1,628. This was the major comparison because we implicitly or explicitly assumed that the relationships observed in the 1,628 retained respondents were close approximations of the unobserved relationships in the entire sample of 2,213. The validity of this assumption depends on the related comparison, the difference between the 585 who left the panel and those who stayed in. Comparisons were made at several levels: univariate (do the means or distributions differ between the groups?), bivariate (do product-moment correlations differ between the groups?), and multivariate (do regression coefficients differ between the groups?).

Univariate. First we looked at the difference between the 2,213 and the 1,628 on a number of variables. (A much larger set of variables was screened; the reduced number included all those which showed any nontrivial differences.) Table C-1 presents the means and standard deviations for the three groups of 2,213, 1,628, and 585. The table also presents the t-ratios between the means for the 585 leavers and the 1,628 stayins as well as the bias—defined as the difference between the means in the 2,213 and 1,628, divided by the standard deviation in the 2,213.

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*Control sample respondents averaged higher on measures of flexibility, ambitious job attitudes, and use of amphetamines; they averaged lower on a measure of resentment. The controls were also more likely to have dropped out of high school.

Bias is perhaps the most important measure since it shows how different the 1,628 are from the 2,213. This measure was as much as .10 (or 10 percent of a standard deviation) for only three variables: race and two measures of intellectual ability. Other variables for which bias exceeded .05 were the Quick Test, grades, broken home, and socioeconomic level.

As noted, these variables were preselected for having shown some participation-related differences. Not surprisingly, then, the t-ratios demonstrated that for most of the variables, the 585 nonparticipants were significantly different from the 1,628 participants (ignoring design effects). But, as previously indicated, the bias in most cases was rather small, usually less than 5 percent of a standard deviation.

In what specific ways did the nonparticipants differ from the participants? We restricted our attention to those variables for which the t-ratio was at least 2.94, which would be statistically significant at a probability less than .05 (assuming a design effect of 2.25). The nonparticipants scored lower on ability measures, plans to go to college, average grades, positive family relations, and a measure of socioeconomic level. They scored higher on measures of negative school motivation, need for social approval, parental punitiveness, and urbanicity. Blacks, and those from a broken home, showed greater-than-average rates of nonparticipation.

Bivariate. A matrix of intercorrelations among the 24 variables in Table C-1 was generated for each of three groups: the 2,213 original (Time 1) respondents, the 1,628 Time 5 respondents, and the 585 Time 1 respondents who were not Time 5 respondents. For the latter two groups, z-tests were computed on each of the 276 pairs of corresponding correlations. In 47 instances, the z value was greater than 2.0. In all but one of these cases, the absolute value of the correlation based on the 1,628 respondents was higher than the corresponding correlation based on the 585 panel leavers. In other words, where the strength of relationship differed, the relationship was stronger in the retained sample.

This result would probably be expected on the grounds that the later nonparticipants were in some sense "poor respondents." As a group, they scored lower in measures of intellectual and verbal ability, which implies that there was probably more measurement error in their responses. They were also likely to be less motivated to respond accurately, particularly since the initial interviewing and questionnaire administration took place in a school setting. Their lower grades, lower socioeconomic level, and more negative school motivation all suggest lower motivation to perform well in such a setting. It was noted earlier that nonparticipants scored higher in need for social approval, which, at least superficially, is inconsistent with a hypothesis that they were less motivated to perform well. But if need for social approval is viewed as a sort of lie scale, or a tendency to distort the truth in a socially desirable direction, then the result would be consistent with expectation.

A reassuring aspect of the matrixes is that even when the correlation based on the 1,628 participants differed significantly from the corresponding correlation based on the 585 nonparticipants, the correlation based on the 1,628 was usually not very different from that based on the 2,213. In only one of the 47 cases where the z value was at least 2.0 did the correlation based on 1,628 differ from that based on 2,213 by as much as .05. For most the differences were .02 or .03, and it must be remembered that these cases were those most likely to have the largest differences. For the entire matrix, the differences were slight indeed. We conclude from these data that analyses based on the 1,628 retained respondents are not likely to be seriously in error.

Multivariate. We tested this conclusion by setting up a simple multivariate analysis. Our model posited that plans to go to college are directly dependent on socioeconomic level (SEL), ability, and grades; that grades are directly dependent on SEL and ability; and that ability is directly dependent on SEL. We estimated path coefficients for that model using the matrix of correlations based on all 2,213 cases, and also the matrix using only the Time 5 participants. Estimating the coefficients both ways resulted in very similar values; no coefficient differed by as much as .020 between the two. The SEL-grades link in both instances was about .07; removal of this link resulted in estimates for which, again, no coefficient differed by more than .020 between the two. The proportion of variance explained in college plans was slightly higher in the case of the 1,628 analysis (.186 versus .167). This is to be expected given that zero-order correlations tended to be higher in the matrix based on 1,628 respondents than in that based on 2,213.

The variables used in this analysis showed relatively substantial differences between the participants and nonparticipants. In spite of this, the estimates derived from the 1,628 differed very little from those derived from the 2,213. These data support our contention that sample attrition probably did result in serious errors in analyses or relationships among variables.

Comparison of Sample Data with Census Data

As a further check on the degree of bias present in the 1974 sample, Tables C-2 and C-3 show selected characteristics from the sample and comparative data from the U.S. Bureau of the Census. Table C-2 shows that the sample is similar to population percentages in region, race, and marital status. The comparison for urbanicity is not so close, probably reflecting the fact that older people are relatively more likely to live in rural areas or small towns. Table C-3 shows the comparison for labor force data. The Youth in Transition sample somewhat over-represents those in school, and under-represents those in the military and other.

TABLE C-1

Comparison of Time 5 Respondents and Nonrespondents

Variable	Time 1 Respondents N = 2213 (1) M	(2) SD	Time 5 Respondents N = 1628 (3) M	(4) SD	Time 5 Nonrespondents N = 585 (5) M	(6) SD	t-ratio*	bias†
Socioeconomic Level	5.02	.80	5.08	.80	4.86	.78	5.67	−.07
Parental Punitiveness	2.34	.69	2.31	.67	2.44	.71	−3.99	.05
Broken Home	.21	.41	.17	.38	.30	.46	−6.83	.09
Positive Family Relations	3.50	.54	3.53	.54	3.44	.55	3.41	−.04
Race	.88	.32	.92	.28	.80	.40	7.54	−.10
Urbanicity	3.29	1.66	3.22	1.65	3.50	1.65	−3.57	.05
Quick Test	108.64	12.29	109.68	11.90	105.77	12.90	6.66	−.08
GATB-J	19.03	6.59	19.70	6.38	17.19	6.83	8.01	−.10
Gates Test	36.15	6.08	36.82	5.42	34.26	7.31	8.89	−.11
Average Grades (9th)	39.97	7.24	40.50	7.10	38.50	7.41	5.78	−.07
College Plans	.59	.49	.61	.49	.52	.50	3.80	−.05
Positive School Attitudes	3.25	.53	3.26	.52	3.22	.56	1.62	−.02
Negative School Attitudes	1.90	.61	1.88	.60	1.98	.64	−3.40	.04
Self-Concept: School Ability	4.15	.73	4.16	.74	4.10	.70	1.77	−.02
Self-Esteem	3.75	.52	3.74	.52	3.78	.52	−1.76	.02
Need Social Approval (Approach)	1.56	.20	1.55	.20	1.59	.20	−4.24	.05
Negative Affective States	2.62	.54	2.62	.55	2.60	.54	0.69	−.01
Somatic Symptoms	2.20	.59	2.20	.57	2.22	.64	−0.94	.01
Social Values	4.69	.57	4.70	.57	4.67	.58	1.10	−.01
Internal Control	1.66	.19	1.67	.19	1.65	.19	2.16	−.03
Flexibility	1.36	.17	1.36	.17	1.35	.16	2.13	−.03
Status of Aspired Occupation	61.20	26.20	62.10	26.00	58.60	26.80	2.40	−.04
Interpersonal Aggression	1.54	.58	1.52	.57	1.58	.61	−2.15	.03
Total Delinquency	1.63	.54	1.62	.52	1.66	.57	−1.63	.02

*The t-ratio is between the means of the Time 5 respondents and nonrespondents. [Column (3) versus column (5).]

†Bias is the difference between the means of all the Time 1 respondents and the Time 5 respondents, divided by the standard deviation of the former. [Column (1) minus column (3), divided by column (2).]

TABLE C-2

Selected Characteristics of the Youth in Transition Panel (Spring 1974) with Comparative Data from Census Reports

	Percentage of YIT Males (Median age 22.5 years)	Percentage in Census Data	Population
A. *Region of Residence*			
Northeast	21.8	23.4	Total Pop. 1974*
North Central	29.5	27.2	
South	30.3	31.8	
West	18.4	17.6	
	100.0	100.0	
B. *Urbanicity*			
Rural, sm. town, sm. city (<50K)	44.7	64.1	Total Pop. 1970†
Medium city/suburb (50K-100K)	17.3	8.2	
Fairly lg. city/suburb (100K-500K)	19.3	12.1	
Very large city/suburb (>500K)	18.8	15.6	
	100.1	100.0	
C. *Race*			
Black	8.5	11.6	Males 20–24 (est.) 1974‡
Other	91.5	88.4	
	100.0	100.0	
D. *Marital Status*			
Single, never married	49.1	54.9 46.4§	Males 22,23
Married, includes divorced or separated	50.9	45.1 53.6§	
	100.0	100.0 100.0	

*Total population, males and females. Source: U.S., Bureau of the Census. Population Estimates and Projections. *Current Population Reports.* Series P-25, No. 508, November 1973, p.2.

†Total population, males and females. Source: U.S., Bureau of the Census. *Statistical Abstract of the United States, 1974,* p. 18.

‡Males, age 20–24. Source: U.S., Bureau of the Census. Special Studies. *Current Population Reports.* Series P-23, No. 54, July 1975, p. 17.

//Males, age 22. Source: U.S., Bureau of the Census. Marital Status and Living Arrangements. *Current Population Reports.* Series P-20, No. 271, March 1974, Table C.

§Males, age 23. Source: *Current Population Reports,* March 1974, Table C.

TABLE C-3

Labor Force Data on YIT Sample Compared with Population Characteristics, Spring 1974

	Frequency		Percentage	
	B.L.S.* (Males 20–24 years old)	Y.I.T. (Grade Cohort Males Mdn. 23.4 years old)	B.L.S.	Y.I.T.
Employed	6,441,000	1,148	69.7	70.5
Unemployed	542,000	78	5.9‡	4.8‡
School	1,021,000	282	11.0	17.3
Military Service	864,000	92	9.4	5.7
Other†	371,000	28	4.0	1.7
	9,240,000	1,628	100.0	100.0

*Bureau of Labor Statistics, *Employment and Earnings* 20.11. (May 1974), Table A-3, p. 20. April 1974, Center for Political Studies, household survey.

†B.L.S.: keeping house, unable to work.

Y.I.T.: missionaries, travelling, volunteer work in a kibbutz, etc.

‡The unemployment rate as typically reported uses a base of the "Civilian Labor Force." Using this would result in a B.L.S. unemployment rate of 7.8 percent and a Y.I.T. rate of 6.8 percent.

Appendix D

ESTIMATING THE POPULATION DROPOUT RATE

Two sources were used to estimate the true percentage of male high school dropouts who had not secured a high school diploma or its equivalent by approximately age 23. One was the Youth in Transition study, the other was published Census data. In both cases the object was to estimate this figure for the population defined as males who completed nine grades of schooling and entered tenth grade in a public high school in the United States during 1966.

Estimates Using the Youth in Transition Data

Number in the Panel Classified as "Dropouts." At Time 4 it was estimated that 395 panel members had at some time between grades 10 and 12 dropped out of high school (except for illness) for more than a few weeks. This total includes some who later obtained a high school diploma or its equivalent.

Calculations:

157	respondents at Time 4 known to be dropouts
+129	"trackbacks" (nonrespondents at Time 4 for whom educational attainment information was provided)
+109	(assumes that half of the 217 remaining nonrespondents should be classified as dropouts—see *Youth in Transition,* Vol. III [1971], pp. 19–23)
=395	estimated total number of dropouts in YIT panel as of one year beyond normal graduation from high school

Dropouts without a High School Diploma or Its Equivalent. Among the Time 5 respondents in the YIT panel, 209 had (at some time after the start of tenth grade) dropped out of high school. Of these, 113 had not secured a high school diploma of some kind.

113 Time 5 respondents without a high school diploma or equivalent. This equals .54 of the 209 dropouts who remained in the panel at Time 5.
395 estimated total dropouts in YIT panel
−209 Time 5 respondents classified as dropouts
+110 { = 186 estimated dropouts among the nonrespondents
×.54 estimate of proportion of nonrespondent dropouts who had not secured a diploma by Time 5.
= 100 Based on proportion of responding dropouts who had not secured a diploma.
= 213 estimated number of original YIT panel members without high school diplomas
÷ 2213 total number in original YIT panel
= 9.6 percent

Ten percent plus or minus 1 percent is the estimated percentage of the YIT panel who dropped out of high school and who at age 23 had not secured a high school diploma or its equivalent.

Estimates Using Census Data

Census collected nationwide data on high school completion at the same time YIT was in the field collecting Time 5 data from the panel. The Census findings are reported in "Educational Attainment in the United States: March 1973 and 1974" (Census, 1974b). In order to use the Census data to make estimates similar to those made with the YIT panel data, both the population base and the definition of educational attainment had to be adjusted.

Basically, Census reported that 83.5 percent of the 22 to 24 year old males had completed 12th grade in "regular" schools (public or parochial systems, day or night sessions). If we eliminate those who never entered tenth grade (as was done in the sampling frame for the YIT study) the percentage can be increased to 88.2 percent completing twelfth grade (see Table D-1).

But the Census definition of high school completion is more restrictive than the YIT definition. It was based on responses to two questions: "What is the highest year of school he has ever attended?" "Did he finish this grade?" Most of those who earned their diploma through a high school equivalency exam such as the G.E.D. would not be included in the Census figure. We estimate the percentage who achieved equivalency to be as high as 2 percent, boosting Census data to 90.2 percent. This leaves 9.8 percent as high school dropouts who had not earned a high school diploma or its equivalent. This is virtually the same figure obtained by extrapolation from the YIT data.

In conclusion, we estimate the population percentage of dropouts in the YIT age cohort without high school diplomas or the equivalent by age 23 to be 10 percent, ±1 percent (taking account of extrapolated estimates); thus the Time 5 YIT panel (6.9 percent dropouts without diplomas) under-represents dropouts by a factor of about 1.4.

TABLE D-1

Census Data on High School Completion Adjusted to Match Definition of YIT Population (22–24 Year Old Males, March 1974)

Years of School Completed	Numbers (in thousands) Unadjusted		Adjusted	
8 years or less	226	16.5%	[226]	Not part of YIT population*
9 years	167		[42]	
			125	11.8%
10 years	224		224	
11 years	216		216	
12 years	1890	83.5% Completed 12th Grade	1890	88.2%
1 year of college	455		455	
2 years of college	590		590	
3 years	439		439	
4 years	657		657	
5 years or more	194		194	
Total	5058		4,790.25	

SOURCE: Census (1974b)

*It was estimated that as many as one-quarter (42 thousand) of those completing ninth grade would not have entered tenth grade.

Appendix E

TABULAR DATA FOR FIGURES

This appendix presents the data underlying each figure in the text (except for a few figures which incorporate all such underlying data). The tables are numbered to correspond with the relevant figure; thus, Table E-1-3 provides the data on which Figure 1-3 is based. A word about the tables for figures in Chapter 2: the frequencies provided in the tables in this appendix are based on a six category version of educational attainment, but the figures use only four categories (see Table 2-1 and accompanying discussion in the text).

Table E-1-3

Status of Aspired Occupation, 1966 to 1974

	1966	1968	1969	1970	1974
Mean	62.1	59.9	58.6	58.2	54.6
Standard Deviation	26.0	24.7	24.7	24.4	23.4
N	1231	1222	1271	1280	1360

Table E-2-1

Educational Attainment by Socioeconomic Level

Education	Low (1)	(2)	(3)	(4)	(5)	High (6)	M.D.	Total
	Socioeconomic Level							
Graduate Work	0	3	17	38	32	30	1	121
Bachelor Degree	3	13	51	69	58	49	2	245
Associate Degree	2	8	38	57	29	8	1	143
Some College	16	67	157	190	109	51	15	605
H. S. Diploma	49	91	136	84	25	2	14	401
H. S. Dropout	19	32	33	15	5	0	9	113
Total	89	214	432	453	258	140	42	1,628

Table E-2-2

Educational Attainment by Number of Siblings

Education	0	1	2	3	4	5	6	7	Total
	Number of Siblings								
Graduate Work	10	45	38	17	5	5	1	0	121
Bachelor Degree	17	81	67	52	12	10	3	3	245
Associate Degree	8	43	39	23	18	4	2	6	143
Some College	30	124	150	124	78	47	20	32	605
H. S. Diploma	14	60	78	81	52	43	31	42	401
H. S. Dropout	5	9	14	33	22	6	12	12	113
Total	84	362	386	330	187	115	69	95	1,628

Table E-2-3

Educational Attainment by Broken Home

Education	Broken Home: Home Intact	Broken Home: Home Broken by Death	Broken Home: Home Broken by Divorce	Total
Graduate Work	107	7	7	121
Bachelor Degree	218	16	11	245
Associate Degree	119	10	14	143
Some College	499	44	62	605
H. S. Diploma	327	30	44	401
H. S. Dropout	78	16	19	113
Total	1,348	123	157	1,628

Table E-2-4

Educational Attainment by Parental Punitiveness

	Parental Punitiveness									
Education	Low (1)	(2)	(3)	(4)	(5)	(6)	(7)	High (8)	M.D.	Total
Graduate Work	11	21	36	28	14	6	3	2	0	121
Bachelor Degree	15	53	73	56	25	11	9	2	1	245
Associate Degree	5	24	39	33	25	11	4	1	1	143
Some College	34	73	156	133	103	62	19	15	10	605
H. S. Diploma	28	56	74	71	57	66	26	14	9	401
H. S. Dropout	6	11	14	24	15	16	16	7	4	113
Total	99	238	392	345	239	172	77	41	25	1,628

Table E-2-5

Educational Attainment by Race

Education	Race: White	Race: Black-Integrated School	Race: Black-Segregated School in North	Race: Black-Segregated School in South	M.D.	Total
Graduate Work	116	2	0	0	3	121
Bachelor Degree	232	4	1	5	3	245
Associate Degree	136	3	0	1	3	143
Some College	550	17	16	11	11	605
H. S. Diploma	342	7	11	37	4	401
H. S. Dropout	85	2	8	14	4	113
Total	1,461	35	36	68	28	1,628

Table E-2-6

Educational Attainment by Intellectual Ability

Education	Intellectual Ability: Low (1)	(2)	(3)	(4)	High (5)	Total
Graduate Work	1	1	19	57	43	121
Bachelor Degree	1	8	69	106	61	245
Associate Degree	3	12	58	60	10	143
Some College	25	94	227	202	57	605
H. S. Diploma	60	127	156	52	6	401
H. S. Dropout	38	30	30	13	2	113
Total	128	272	559	490	179	1,628

Table E-2-7

Educational Attainment by Grade Failure

Education	Held Back at Least Once	Never Held Back	M.D.	Total
Graduate Work	3	118	0	121
Bachelor Degree	8	237	0	245
Associate Degree	13	130	0	143
Some College	114	490	1	605
H. S. Diploma	128	272	1	401
H. S. Dropout	61	52	0	113
Total	327	1,299	2	1,628

Table E-2-8

Educational Attainment by Classroom Grades

	Classroom Grades					
Education	A	B	C	D	M.D.	Total
Graduate Work	0	12	71	38	0	121
Bachelor Degree	1	41	137	64	2	245
Associate Degree	1	63	74	4	1	143
Some College	26	273	263	43	0	605
H. S. Diploma	35	263	98	4	1	401
H. S. Dropout	27	72	11	1	2	113
Total	90	724	654	154	6	1,628

Table E-2-9

Educational Attainment by Rebellious Behavior in School

Education	Rebellious Behavior in School Low (1)	(2)	(3)	(4)	High (5)	M.D.	Total
Graduate Work	29	57	29	6	0	0	121
Bachelor Degree	50	132	44	16	3	0	245
Associate Degree	27	61	41	13	1	0	143
Some College	80	257	164	69	25	10	605
H. S. Diploma	41	153	107	64	28	8	401
H. S. Dropout	6	30	27	32	15	3	113
Total	233	690	412	200	72	21	1,628

Table E-2-10

Educational Attainment by Program of Study

Education	Program of Study College Prep	General	Vocational	Commercial	Agricultural	Other	Total
Graduate Work	96	20	0	0	0	5	121
Bachelor Degree	172	61	2	1	3	6	245
Associate Degree	79	35	9	6	2	12	143
Some College	294	216	29	21	16	29	605
H. S. Diploma	71	183	51	31	35	30	401
H. S. Dropout	12	61	15	8	5	12	113
Total	724	576	106	67	61	94	1,628

Table E-2-11

Educational Attainment by College Plans

	College Plans		
Education	Yes	No	Total
Graduate Work	110	11	121
Bachelor Degree	219	26	245
Associate Degree	102	41	143
Some College	391	214	605
H. S. Diploma	138	263	401
H. S. Dropout	34	79	113
Total	994	634	1,628

Table E-2-12

Educational Attainment by Negative School Attitudes

	Negative School Attitudes						
Education	Low (1)	(2)	(3)	(4)	High (5)	M.D.	Total
Graduate Work	70	40	9	2	0	0	121
Bachelor Degree	116	94	27	4	2	2	245
Associate Degree	52	61	16	9	3	2	143
Some College	217	199	117	49	18	5	605
H. S. Diploma	82	131	89	59	31	9	401
H. S. Dropout	12	23	35	25	17	1	113
Total	549	548	293	148	71	19	1,628

Table E-2-13

Educational Attainment by Self-Concept: School Ability

Education	Self-Concept: School Ability Low (1)	(2)	(3)	(4)	High (5)	M.D.	Total
Graduate Work	0	4	39	62	16	0	121
Bachelor Degree	0	8	94	122	21	0	245
Associate Degree	0	8	89	41	4	1	143
Some College	5	100	314	163	21	2	605
H. S. Diploma	7	106	240	48	0	0	401
H. S. Dropout	8	37	54	12	1	1	113
Total	20	263	830	448	63	4	1,628

Table E-2-14

Educational Attainment by Ambitious Job Attitudes

Education	Ambitious Job Attitudes Low (1)	(2)	(3)	(4)	(5)	High (6)	M.D.	Total
Graduate Work	1	10	19	38	41	11	1	121
Bachelor Degree	9	10	61	69	78	17	1	245
Associate Degree	4	16	37	34	38	11	3	143
Some College	43	70	121	181	117	63	10	605
H. S. Diploma	36	78	112	91	54	26	4	401
H. S. Dropout	23	27	30	13	11	7	7	113
Total	116	211	380	426	339	135	21	1,628

Table E-2-15

Educational Attainment by Status of Aspired Occupation

Education	Status of Aspired Occupation Low (1)	(2)	(3)	(4)	High (5)	M.D.	Total
Graduate Work	1	0	9	45	40	26	121
Bachelor Degree	6	6	21	80	90	42	245
Associate Degree	8	5	13	40	39	38	143
Some College	48	31	73	150	157	146	605
H. S. Diploma	76	54	40	78	34	119	401
H. S. Dropout	35	16	9	20	7	26	113
Total	174	112	165	413	367	397	1,628

Table E-2-16

Educational Attainment by Delinquent Behavior in School

Education	Delinquent Behavior in School Low (1)	(2)	(3)	(4)	(5)	(6)	(7)	High (8)	M.D.	Total
Graduate Work	59	27	10	12	6	4	0	1	2	121
Bachelor Degree	103	51	27	30	19	7	1	1	6	245
Associate Degree	53	18	13	26	18	7	4	0	4	143
Some College	154	88	89	117	75	28	28	15	11	605
H. S. Diploma	65	64	54	74	56	31	24	19	14	401
H. S. Dropout	6	11	6	18	21	13	17	11	10	113
Total	440	259	199	277	195	90	74	47	47	1,628

Table E-3-1

Duncan Status of Job by Educational Attainment

Education	Mean Status Unadjusted	Adjusted[a]	N
Dropout	23.3	26.5	80
H. S. Graduate	27.4	29.3	272
Some College	36.2	35.2	327
College Graduate	57.4	54.8	173

eta = .510 beta = .434

Grand Mean = 36.48

Standard Deviation = 22.48

Table E-3-2

Duncan Status of Job by Military Service

		Mean Status		
Military Service	N	Unadjusted	Adjusted[a]	Adjusted[b]
None	675	38.8	38.1	37.2
Regular	111	29.3	31.4	35.1
Vietnam	66	25.0	28.5	31.6

eta = .204 beta = .144 beta = .071

Grand Mean = 36.48

Standard Deviation = 22.48

[a] Adjusting for socioeconomic level, number of siblings, and ability.

[b] Adjusting for socioeconomic level, number of siblings, ability, and educational attainment.

Table E-3-3

Employment Status by Marital/Parental Status

Marital/Parental Status	N	Proportion Unemployed Unadjusted	 Adjusted[a]	 Adjusted[b]
Single	414	.116	.120	.122
Married, no children	232	.056	.062	.064
Married, parent	256	.055	.043	.038
		eta = .109	beta = .125	beta = .134

Grand Mean = .083

Standard Deviation = .276

Table E-3-4

Duncan Status by Marital/Parental Status

Marital/Parental Status	Mean Job Status Unadjusted	 Adjusted[a]	 Adjusted[b]	N
Single	39.3	37.6	35.8	383
Married, no children	38.8	38.7	38.7	223
Married, parent	30.0	32.7	35.6	246
	eta = .185	beta = .108	beta = .056	

Grand Mean = 36.48

Standard Deviation = 22.48

[a] Adjusting for socioeconomic level, number of siblings, and ability.

[b] Adjusting for socioeconomic level, number of siblings, ability, and educational attainment.

Table E-3-5

Duncan Status of Job by Urbanicity

Urbanicity	Mean Job Status Unadjusted	Adjusted[a]	Adjusted[b]	N
Rural, Small City	33.6	34.4	35.3	398
Medium City	33.9	35.6	36.0	149
Large City	40.1	38.7	37.9	165
Very Large City	43.1	40.6	38.6	140
	eta = .170	beta = .107	beta = .060	

Grand Mean = 36.48
Standard Deviation = 22.48

[a] Adjusting for socioeconomic level, number of siblings, and ability.

[b] Adjusting for socioeconomic level, number of siblings, ability and educational attainment.

Table E-4-1

Job Satisfaction by Education and Job Status

Education	Mean Job Satisfaction Duncan Status of Job Low 01-19		20-59		High 60-96		Total	
	N	Mean	N	Mean	N	Mean	N	Mean
H. S. Dropout	54	3.63	32	3.75	6	4.50	92	3.73
H. S. Graduate	164	3.60	146	3.86	21	4.09	331	3.75
Some College	119	3.37	197	3.71	67	3.98	383	3.65
College Graduate	22	2.82	48	3.50	109	4.01	179	3.73
Total	359	3.48	423	3.74	203	4.02	985	3.70

Table E-5-1

Self-Esteem by Educational Attainment

Education	Self-Esteem 1966	1968	1969	1970	1974	N (1974)
Dropout	3.51	3.67	3.68	3.65	4.05	106
High School Diploma	3.59	3.75	3.76	3.83	4.17	382
Some College	3.75	3.80	3.89	3.89	4.22	601
Associate Degree	3.80	3.86	3.97	3.96	4.26	141
Bachelor Degree	3.90	3.94	3.98	3.98	4.28	244
Graduate Work	4.01	4.06	4.07	4.09	4.40	120
Grand Mean =	3.74	3.83	3.88	3.90	4.22	
Standard Deviation =	.52	.49	.50	.49	.48	
Eta =	.264	.201	.208	.188	.159	

Table E-5-2

Status of Aspired Occupation by College Plans/Attainment

College Plans/Attainment	1966	1968	1969	1970	1974
NC/NC	34.9	37.6	35.0	35.3	34.9
C/NC	63.9	50.9	45.4	44.2	45.5
NC/C	50.0	52.7	57.0	57.0	52.3
C/C	75.6	71.7	69.1	69.3	64.2
Grand Mean =	62.1	59.9	58.6	58.2	54.6
Standard Deviation =	25.9	24.7	24.7	24.4	23.4
Eta =	.630	.549	.538	.557	.494

Table E-5-3

Self-Esteem by College Plans vs. Attainment

	Self-Esteem				
College Plans vs. Attainment	1966	1968	1969	1970	1974
NC/NC	3.53	3.70	3.74	3.78	4.13
C/NC	3.66	3.79	3.76	3.84	4.16
NC/C	3.68	3.79	3.88	3.90	4.20
C/C	3.87	3.90	3.96	3.96	4.28
Grand Mean =	3.74	3.83	3.88	3.90	4.22
Standard Deviation =	.52	.49	.50	.49	.48
Eta =	.263	.156	.186	.140	.131

Table E-8-1

Status of Aspired Occupation by Educational Attainment

Education	1966		1968		1969		1970		1974	
	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
Dropout	87	40.0	66	40.4	57	35.1	66	34.5	88	35.4
High School Diploma	282	46.6	279	42.7	290	39.3	299	39.0	307	39.2
Some College	459	65.6	444	60.7	480	60.6	475	59.9	509	54.3
Associate Degree	105	69.0	119	64.3	122	64.3	120	64.8	123	59.0
Bachelor Degree	203	75.0	205	75.8	209	74.1	210	74.8	219	69.3
Graduate Work	95	77.1	109	78.1	113	77.0	110	78.3	114	78.9
Total	1231	62.1	1222	59.9	1271	58.6	1280	58.2	1360	54.6
Standard Deviation =		25.9		24.7		24.7		24.4		23.4
Eta =		.461		.516		.548		.579		.545

Table E-8-2

Status of Aspired Occupation by Occupational Attainment

Occupation		Status of Aspired Occupation									
		1966		1968		1969		1970		1974	
		N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
(Low)	01-15	158	49.6	139	46.3	144	45.7	148	42.1	162	31.3
	16-30	198	50.6	200	49.1	214	44.4	213	46.2	228	40.1
	31-45	138	60.3	131	59.7	128	57.3	144	55.9	152	48.8
	46-60	102	62.7	96	56.6	99	57.9	96	58.0	111	56.1
	61-75	119	68.3	130	65.5	129	66.9	131	65.2	130	66.8
(High)	76-96	40	80.5	45	77.0	43	76.3	41	73.8	48	74.3
	Total	755	58.2	741	56.0	757	54.3	773	53.4	831	48.3
Standard Deviation =			26.8		25.2		25.5		24.7		22.9
Eta =			.327		.346		.392		.381		.579

Table E-8-3

Status of Aspired Occupation by Marital/Parental Status

Marital/Parental Status	Status of Aspired Occupation									
	1966		1968		1969		1970		1974	
	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
Single	591	66.4	595	65.0	621	63.4	627	64.3	650	58.9
Married, No Children	318	61.4	311	60.2	339	59.1	328	58.3	354	54.0
Married, Parent	257	53.7	252	49.1	250	47.3	260	44.6	283	46.2
Total	1166	62.2	1158	60.2	1210	58.9	1215	58.5	1292	54.7
Standard Deviation =		25.9		24.6		24.7		24.3		23.5
Eta =		.195		.254		.251		.316		.212

Table E-8-4

Preference for a Job with Low Responsibility
by Educational Attainment

	Percent Rating Low Responsibility as Not Important									
	1966		1968		1969		1970		1974	
Education	N	%	N	%	N	%	N	%	N	%
Dropout	111	13.5	82	22.0	83	19.3	71	29.6	106	60.4
H. S. Diploma	395	14.4	361	26.0	352	23.3	340	32.6	381	65.4
Some College	598	23.2	560	37.0	557	36.1	514	41.2	600	74.7
Associate Degree	141	28.4	137	38.0	134	33.6	131	42.0	141	73.8
Bachelor Degree	244	31.1	239	38.9	234	42.3	232	42.2	243	79.4
Graduate Work	119	43.7	118	53.4	118	55.1	115	67.0	119	85.7
Total	1608	23.9	1497	35.2	1478	34.4	1403	40.9	1590	73.0
Standard Deviation =		42.7		47.8		47.5		49.2		44.4
Eta =		.216		.162		.197		.181		.150

Table E-8-5

Preference for a Job With Good Pay
by Educational Attainment

	Percentage Rating Good Pay as Very Important									
	1966		1968		1969		1970		1974	
Education	N	%	N	%	N	%	N	%	N	%
Dropout	111	55.9	81	53.6	84	53.6	70	55.7	105	73.3
H. S. Diploma	393	65.1	360	61.1	353	59.8	339	59.0	380	67.9
Some College	598	67.2	558	56.6	554	55.1	515	55.1	598	53.3
Associate Degree	141	63.1	138	61.6	134	59.7	131	52.7	141	46.8
Bachelor Degree	244	63.1	240	55.0	233	55.8	233	45.9	242	43.8
Graduate Work	120	62.5	118	49.2	117	47.0	116	40.5	120	31.7
Total	1607	64.6	1495	57.3	1475	56.0	1404	53.1	1586	54.5
Standard Deviation =		47.8		49.5		49.7		49.9		49.8
Eta =		.062		.069		.069		.113		.228

Table E-8-6

Ambitious Job Attitudes by Marital/Parental Status

	Ambitious Job Attitudes									
Marital/Parental Status	1966		1968		1969		1970		1974	
	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
Single	778	5.13	731	5.26	729	5.27	694	5.21	767	5.54
Married, No Children	402	5.11	382	5.31	373	5.35	355	5.32	400	5.73
Married, Parent	345	4.99	311	5.27	300	5.29	285	5.27	342	5.81
Total	1525	5.09	1424	5.28	1402	5.29	1334	5.25	1509	5.65
Standard Deviation =		.68		.66		.65		.64		.57
Eta =		.081		.033		.056		.072		.203

Table E-9-1

Interpersonal Aggression by Educational Attainment

	Interpersonal Aggression									
	1966		1968		1969		1970		1974	
Education	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
Dropout	103	0.92	81	0.50	82	0.49	71	0.40	106	0.25
H. S. Diploma	386	0.62	359	0.31	361	0.30	318	0.32	385	0.23
Some College	594	0.52	566	0.20	557	0.19	506	0.19	602	0.16
Associate	139	0.41	138	0.14	136	0.11	130	0.12	141	0.08
Bachelor Degree	239	0.35	239	0.11	239	0.07	235	0.10	240	0.06
Graduate Work	120	0.34	119	0.08	119	0.06	116	0.09	121	0.04
Total	1581	0.52	1502	0.21	1494	0.20	1376	0.20	1595	0.14
Standard Deviation =		.57		.40		.38		.39		.32
Eta =		.253		.252		.280		.242		.216

Table E-9-2

Interpersonal Aggression by Employment Status

Employment Status	Interpersonal Aggression									
	1966		1968		1969		1970		1974	
	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
Unemployed	83	0.68	79	0.37	79	0.38	69	0.35	88	0.30
Employed	938	0.56	868	0.23	867	0.23	804	0.22	937	0.15
Total	1021	0.57	947	0.24	946	0.24	873	0.23	1025	0.16
Standard Deviation =		.61		.44		.44		.41		.36
Eta =		.052		.091		.098		.087		.116

Table E-9-3

Interpersonal Aggression by Marital/Parental Status

Marital/Parental Status	Interpersonal Aggression									
	1966		1968		1969		1970		1974	
	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
Single	760	0.45	735	0.17	738	0.15	687	0.15	772	0.12
Married, No Children	402	0.46	384	0.17	381	0.15	344	0.18	399	0.12
Married, Parent	339	0.73	310	0.32	304	0.33	276	0.31	347	0.16
Total	1501	0.52	1429	0.20	1423	0.19	1307	0.19	1518	0.13
Standard Deviation =		.57		.40		.38		.37		.31
Eta =		.203		.154		.191		.161		.053

Table E-9-4

Cigarette Smoking by Educational Attainment

	Percent Smoking Cigarettes Daily					
	1969		1970		1974	
Education	N	%	N	%	N	%
Dropout	70	61.4	70	64.3	106	73.6
H. S. Diploma	317	51.4	315	54.6	384	57.9
Some College	497	37.8	498	44.2	602	49.7
Associate Degree	130	20.0	131	29.0	141	34.8
Bachelor Degree	235	15.7	236	20.8	242	28.1
Graduate Work	116	12.1	116	12.9	120	13.3
Total	1365	34.5	1366	39.5	1595	45.7
Standard Deviation =		47.6		48.9		49.8
Eta =		.320		.306		.301

Table E-9-5

Alcohol Use by Educational Attainment

	Percent Using Alcohol Weekly					
	1969		1970		1974	
Education	N	%	N	%	N	%
Dropout	71	47.9	71	52.1	106	65.1
High School Diploma	317	42.3	312	49.7	385	63.1
Some College	500	32.4	501	45.1	603	59.7
Associate Degree	131	25.2	130	43.8	141	59.6
Bachelor Degree	234	19.7	236	38.1	244	53.3
Graduate Degree	115	16.5	115	27.0	120	50.8
Total	1368	31.3	1365	43.7	1599	59.2
Standard Deviation =		46.4		49.6		49.2
Eta =		.202		.130		.083

Table E-9-6

Marijuana Use by College Major

College Major (1974)	Percent Using Marijuana in Last Year					
	1969		1970		1974	
	N	%	N	%	N	%
Math, Physical Science	56	16.1	56	30.4	56	44.6
Biological Science	53	18.9	53	32.1	53	50.9
Social Science	136	22.1	136	50.0	137	63.5
Humanities & Fine Arts	90	44.4	91	60.4	91	69.2
Engineering	77	11.7	77	33.8	77	53.2
Business	172	15.7	172	26.2	174	47.7
Education	67	10.4	67	22.4	67	37.3
Total	651	20.3	652	37.3	655	53.6
Standard Deviation =		40.2		48.4		49.9
Eta =		.258		.271		.199

Table E-9-7

Marijuana Use by Employment Status

Employment Status	Percent Using Marijuana in Last Year					
	1969		1970		1974	
	N	%	N	%	N	%
Unemployed	67	25.4	67	47.8	89	77.5
Employed	798	20.3	803	31.0	931	49.3
Total	865	21.2	870	32.3	1020	51.8
Standard Deviation =		40.9		46.8		50.0
Eta =		.030		.096		.159

Table E-9-8

Marijuana Use by Marital/Parental Status

Marital/Parental Status	Percent Using Marijuana During Last Year					
	1969		1970		1974	
	N	%	N	%	N	%
Single	680	20.7	686	36.4	695	60.7
Married, No Children	342	16.7	342	31.0	354	40.4
Married, Parent	272	23.5	274	32.1	279	40.9
Total	1294	20.2	1302	34.1	1328	51.1
Standard Deviation =		40.2		47.4		.500
Eta =		.060		.053		.201

Table E-9-9

Alcohol Use by Marital/Parental Status

Marital/Parental Status	Percent Using Alcohol Weekly					
	1969		1970		1974	
	N	%	N	%	N	%
Single	683	26.6	684	38.9	699	61.1
Married, No Children	342	32.3	342	44.4	356	50.8
Married, Parent	273	38.8	272	52.6	285	59.3
Total	1300	30.7	1298	43.2	1340	58.0
Standard Deviation=		46.1		49.6		49.4
Eta=		.104		.108		.083

Appendix F

STABILITY COEFFICIENTS

Table F-1 provides estimates of the coefficient of stability for each variable over various time intervals. The stability coefficient is defined as "the correlation between true scores at one time with true scores at another time" (Heise, 1969).

Table F-1

Stability Coefficients for Selected Variables

Variable	Stability Between Data Collection[a]					Annual Stability[b]			
	S_{12}	S_{23}	S_{34}	S_{45}	S_{15}	S_{12}	S_{23}	S_{34}	S_{45}
Average Grades	.89	.88	*	*	*	.93	.88	*	*
Number of Hrs. Homework	.65	.73	*	*	*	.75	.73	*	*
Curriculum	.79	.88	*	*	*	.85	.88	*	*
College Plans	.81	.94	*	*	*	.87	.94	*	*
Interest in Courses	.81	.89	*	*	*	.87	.89	*	*
Pos. School Attitudes	.76	.82	*	*	*	.83	.82	*	*
Neg. School Attitudes	.76	.84	*	*	*	.83	.84	*	*
Acad. Achievement Value	.54	.57	*	*	*	.67	.57	*	*
Self-Esteem	.74	.88	.89	.69	.40	.82	.88	.89	.91
Need Self-Development	.74	.84	.87	*	*	.82	.84	.87	*
Need Self-Utilization	.72	.85	.92	*	*	.80	.85	.92	*
Happiness	.75	.84	.89	*	*	.83	.84	.89	*
Negative Affective State	.76	.89	.93	*	*	.83	.89	.93	*
Somatic Symptoms	.76	.88	.96	*	*	.83	.88	.96	*
Impulse to Aggression	.67	.85	.86	*	*	.76	.85	.86	*
Social Values Cluster	.73	.80	.90	*	*	.81	.80	.90	*
Internal Control	.68	.83	.90	*	*	.78	.83	.90	*
Trust in People	.69	.88	.91	*	*	.78	.88	.91	*
Trust in Government	.69	.75	.74	.59	.23	.78	.75	.74	.88
Interest in Government	.73	.96	.86	.79	.47	.81	.96	.86	.94

Table F-1 (Cont.)

Variable	Stability Between Data Collection[a]					Annual Stability[b]			
	S_{12}	S_{23}	S_{34}	S_{45}	S_{15}	S_{12}	S_{23}	S_{34}	S_{45}
Racial: Strong Govt.	*	*	.99[c]	.61	*	*	*	.99[c]	.88
Racial: Social Dist.	*	*	.82	.57	*	*	*	.82	.87
Racial: Perceived Disc.	*	*	.76	.79	*	*	*	.76	.94
Vietnam Dissent	*	*	.74	.72	*	*	*	.74	.92
Job That Pays Off	.65	.76	.76	.66	.25	.75	.76	.76	.90
Job That Doesn't Bug	.75	.90	.89	.68	.42	.84	.90	.89	.91
Ambitious Job Attitudes	.72	.83	.84	.56	.28	.81	.83	.84	.86
Status of Aspired Occup.	.86	.92	.88	.80	.56	.91	.92	.88	.95
Delinquent Behavior-Sch.	.72	.76	*	*	*	.80	.76	*	*
Seriousness of Delinq.	.84	.87	.90	.65	.43	.89	.87	.90	.90
Interpers. Aggression	.79	.87	90	.68	.42	.86	.87	.90	.91
Theft and Vandalism	.82	.90	.86	.61	.39	.88	.90	.86	.88

Note: * indicates that the variable was not measured at the relevant data collection(s).

[a] Stability estimates were derived by following procedures suggested by Heise (1969). S_{12} is the estimated stability between times 1 and 2. Time intervals between successive data collections are as follows: Time 1 to 2, 18 months; Time 2 to 3, 12 months; Time 3 to 4, 12 months; Time 4 to 5, 48 months.

[b] Annual stability estimates were derived by assuming constant stabilities across longer time intervals.

[c] This figure is unrealistically high. The correlation between the Time 3 and Time 5 measures is actually greater than the correlation between the Time 3 and Time 4 measures; this condition violates basic assumptions underlying the computation of the stability coefficients.

Appendix G

QUESTIONNAIRE

YOUTH IN TRANSITION

A Nationwide Survey of Young Men

(1974)

Dear Youth in Transition Member:

We hope you enjoyed our recent Newsletter telling you about some of the many findings from the Youth in Transition study. As we mentioned in the Newsletter, we are now conducting another survey – much shorter than in the past. Here is the questionnaire we told you about. Please take a few minutes to fill it out – it should take less than an hour of your time. When you have completed it, simply return it to us in the enclosed postage-paid envelope. When we receive the questionnaire with your code number, we will send you $10.00 in appreciation of your time and effort.

We will send your check using the same name and address that appear on the envelope in which you received the questionnaire. If the address is incorrect, fill out the enclosed postcard and return it to us *separately* from the questionnaire. If the address is correct, disregard the enclosed postcard.

As before, all of your answers to questions will be kept completely confidential. Your name does not appear anywhere on the questionnaire; only a code number allows the research staff – and no one else – to identify it. When the questionnaire is received, the answers are put into a form which can never be traced back to you as an individual. But if there are some questions you'd rather not answer, just leave them blank. Also, you should feel free to write in any comments you want.

Your participation is essential to the success of the project, and we thank you in advance for your continuing help. We hope you find the experience of completing the questionnaire an interesting one.

Best regards,

Jerald G. Bachman
Program Director
Youth in Transition

INSTRUCTIONS

1. Please answer all questions in order.
2. Most questions need only a check mark (√) to answer.
3. Please disregard the small numbers in parentheses. They are to help us punch your answers onto IBM cards.
4. When you have finished, seal the questionnaire in the envelope provided and drop it in the mail.

SECTION A

We would like to ask you some general questions first.

A1. What are you doing *now?* (CHECK ALL THAT APPLY)

(1:21) ☐ a. Working for pay at a full-time or part-time job
(1:22) ☐ b. Taking vocational or technical courses at any kind of school or college (for example, vocational, trade, business, or other career training school)
(1:23) ☐ c. Taking academic courses at a two- or four-year college
(1:24) ☐ d. On active duty in the Armed Forces (or service academy)
(1:25) ☐ e. On temporary lay-off from work, looking for work, or waiting to report to work
(1:26) ☐ f. Other (please specify) ____________________

(1:27) **A2.** What one phrase describes what you are doing *mostly?* (CHECK ONLY ONE)

☐ (1) Student in vocational/technical school
☐ (2) Student in college
☐ (3) Working on a job
☐ (4) Serving in the military
☐ (5) Unemployed
☐ (6) Other (please specify) ____________________

A3. With whom do you live? (CHECK ALL THAT APPLY)

(1:28) ☐ a. By myself
(1:29) ☐ b. With parents
(1:30) ☐ c. With wife
(1:31) ☐ d. With other relatives
(1:32) ☐ e. With persons not related to me
(1:33) ☐ f. Other (please specify) ____________________

(1:34-35) **A4.** Which of the following best describes the location of the place where you live?

☐ (01) In a rural or farming community
☐ (02) In a small city or town of fewer than 50,000 people that is not a suburb of a larger place
☐ (03) In a medium-sized city (50,000 – 100,000)
☐ (04) In a suburb of a medium-sized city
☐ (05) In a fairly large city (100,000 – 500,000)
☐ (06) In a suburb of a fairly large city
☐ (07) In a very large city (over 500,000)
☐ (08) In a suburb of a very large city

(1:36) **A5.** How far is this from the neighborhood where you lived when you were last in high school?

☐ (1) Same neighborhood where I lived when I was last in high school
☐ (2) Less than 50 miles
☐ (3) Over 50 miles

Now we'd like to know about some things you already are doing or have done or plan to do in the next few years. Please look at each of the ten activities listed below, and check the box (1, 2, 3, 4, 5, or 6) which shows how likely you are to do each.
(CHECK ONE BOX ON EACH LINE)

			I am now doing this (1)	I have already done this (2)	I definitely will do this (3)	I probably will do this (4)	I probably will *not* do this (5)	I definitely will *not* do this (6)
(1:37)	**A6.**	Complete high school or earn high school equivalency	☐	☐	☐	☐	☐	☐
(1:38)	**A7.**	Receive on-the-job training	☐	☐	☐	☐	☐	☐
(1:39)	**A8.**	Serve on active duty in the military service	☐	☐	☐	☐	☐	☐
(1:40)	**A9.**	Receive job training in military service	☐	☐	☐	☐	☐	☐
(1:41)	**A10.**	Attend a technical or vocational school since high school	☐	☐	☐	☐	☐	☐
(1:42)	**A11.**	Attend a four year college	☐	☐	☐	☐	☐	☐
(1:43)	**A12.**	Attend a two-year college	☐	☐	☐	☐	☐	☐
(1:44)	**A13.**	Graduate from college (four year program)	☐	☐	☐	☐	☐	☐
(1:45)	**A14.**	Graduate from a two-year college	☐	☐	☐	☐	☐	☐
(1:46)	**A15.**	Attend graduate or professional school *after college*	☐	☐	☐	☐	☐	☐

SECTION B

The next questions are about the kind of job you would *like to have*, not necessarily the job you might have now, but rather the kind of job you'd *like to have*. Different people want different things from a job. Some of the things that might be important are listed below. Please read each of the things on the list, then check the box that tells how important this thing would be to you.

Don't just check VERY IMPORTANT for everything. Try to think what things really matter to you, and what things really aren't that important.

How important is this for you?

			Very important (1)	Pretty important (2)	A little important (3)	Not important (4)
(2:21)	**B1.**	A job where there's no one to boss me on the work	☐	☐	☐	☐
(2:22)	**B2.**	A job that is steady, no chance of being laid off	☐	☐	☐	☐
(2:23)	**B3.**	A job where I can learn new things, learn new skills	☐	☐	☐	☐
(2:24)	**B4.**	A job where I don't have to work too hard.	☐	☐	☐	☐
(2:25)	**B5.**	A clean job, where I don't get dirty.	☐	☐	☐	☐
(2:26)	**B6.**	A job with good chances of getting ahead	☐	☐	☐	☐
(2:27)	**B7.**	A job where I don't have to take a lot of responsibility	☐	☐	☐	☐
(2:28)	**B8.**	A job that leaves me a lot of free time to do what I want to do	☐	☐	☐	☐
(2:29)	**B9.**	A job where the pay is good	☐	☐	☐	☐
(2:30)	**B10.**	A job that my friends think a lot of — has class	☐	☐	☐	☐
(2:31)	**B11.**	A job that uses my skills and abilities — lets me do the things I can do best	☐	☐	☐	☐
(2:32)	**B12.**	A job that has nice friendly people to work with	☐	☐	☐	☐
(2:33)	**B13.**	A job that doesn't make me learn a lot of new things	☐	☐	☐	☐

The next few questions ask you to describe what kind of person you are. Please read each sentence, then mark the box that shows how often it is true for you.
(CHECK ONE BOX ON EACH LINE)

			Almost always true (1)	Often true (2)	Sometimes true (3)	Seldom true (4)	Never true (5)
(2:34)	B14.	I feel that I'm a person of worth, at least on an equal plane with others.	☐	☐	☐	☐	☐
(2:35)	B15.	I feel that I have a number of good qualities.	☐	☐	☐	☐	☐
(2:36)	B16.	I am able to do things as well as most other people . . .	☐	☐	☐	☐	☐
(2:37)	B17.	I feel I do not have much to be proud of.	☐	☐	☐	☐	☐
(2:38)	B18.	I take a positive attitude toward myself.	☐	☐	☐	☐	☐
(2:39)	B19.	Sometimes I think I am no good at all.	☐	☐	☐	☐	☐
(2:40)	B20.	I am a useful guy to have around.	☐	☐	☐	☐	☐
(2:41)	B21.	I feel that I can't do anything right.	☐	☐	☐	☐	☐
(2:42)	B22.	When I do a job, I do it well.	☐	☐	☐	☐	☐
(2:43)	B23.	I feel that my life is not very useful.	☐	☐	☐	☐	☐

The next section of this questionnaire is about government and public affairs.
(CHECK ONE BOX FOR EACH QUESTION)

(2:44) **B24.** Some people think about what's going on in government very often, and others are not that interested. How much of an interest do you take in government and current events?

☐ (1) A very great interest
☐ (2) A lot of interest
☐ (3) Some interest
☐ (4) Very little interest
☐ (5) No interest at all

(2:45) **B25.** Do you think the government wastes much of the money we pay in taxes?

☐ (1) Nearly all tax money is wasted
☐ (2) A lot of tax money is wasted
☐ (3) Some tax money is wasted
☐ (4) A little tax money is wasted
☐ (5) No tax money is wasted

(2:46) **B26.** How much of the time do you think you can trust the government in Washington to do what is right?

☐ (1) Almost always
☐ (2) Often
☐ (3) Sometimes
☐ (4) Seldom
☐ (5) Never

(2:47) **B27.** Do you feel that the people running the government are smart people who usually know what they are doing?

☐ (1) They almost always know what they are doing
☐ (2) They usually know what they are doing
☐ (3) They sometimes know what they are doing
☐ (4) They seldom know what they are doing
☐ (5) They never know what they are doing

(2:48) **B28.** **Do you think some of the people running the government are crooked or dishonest?**

- ☐ (1) Most of them are crooked or dishonest
- ☐ (2) Quite a few are
- ☐ (3) Some are
- ☐ (4) Hardly any are
- ☐ (5) None at all are crooked or dishonest

(2:49) **B29.** **Would you say the government is pretty much run for a few big interests looking out for themselves, or is it run for the benefit of all the people?**

- ☐ (1) Nearly always run for a few big interests
- ☐ (2) Usually run for a few big interests
- ☐ (3) Run some for the big interests, some for the people
- ☐ (4) Usually run for the benefit of all the people
- ☐ (5) Nearly always run for the benefit of all the people

(2:50) **B30.** **Do you think military personnel have too much or too little influence on the way the country is run?**

- ☐ (1) Far too much
- ☐ (2) Too much
- ☐ (3) About right
- ☐ (4) Too little
- ☐ (5) Far too little

(2:51) **B31.** **Do you think the U.S. spends too much or too little on the military?**

- ☐ (1) Far too much
- ☐ (2) Too much
- ☐ (3) About right
- ☐ (4) Too little
- ☐ (5) Far too little

(2:52) **B32.** **How would you describe your political preference?**

- ☐ (1) Strongly Republican
- ☐ (2) Mildly Republican
- ☐ (3) Mildly Democrat
- ☐ (4) Strongly Democrat
- ☐ (5) American Independent Party
- ☐ (6) No preference, independent
- ☐ (7) Other (please specify)____________________
- ☐ (8) Haven't thought about it, don't know

Do you agree or disagree with each of the following statements? (CHECK ONE BOX ON EACH LINE)

			Strongly agree (1)	Agree (2)	Disagree (3)	Strongly disagree (4)
(2:53)	**B33.**	**I feel you can be a good citizen even if you don't salute the flag**	☐	☐	☐	☐
(2:54)	**B34.**	**I feel that you can't be a good citizen unless you always obey the law**	☐	☐	☐	☐
(2:55)	**B35.**	**I feel a good citizen should go along with whatever the government does even if he disagrees with it**	☐	☐	☐	☐
(2:56)	**B36.**	**I feel you can't be a good citizen unless you vote regularly in elections**	☐	☐	☐	☐
(2:57)	**B37.**	**I feel a good citizen tries to change the government policies he disagrees with**	☐	☐	☐	☐

The next questions ask your opinion about the United States fighting in Vietnam during the past few years. Do you agree or disagree with each of the following statements? (CHECK ONE BOX ON EACH LINE)

			Strongly agree (1)	Agree (2)	Disagree (3)	Strongly disagree (4)
(2:58)	**B38.**	**Fighting the war in Vietnam was damaging to our national honor or pride**	☐	☐	☐	☐
(2:59)	**B39.**	**Fighting the war in Vietnam was really not in the national interest**	☐	☐	☐	☐
(2:60)	**B40.**	**Fighting the war in Vietnam was important to fight the spread of Communism**	☐	☐	☐	☐
(2:61)	**B41.**	**Fighting the war in Vietnam brought us closer to world war** . . .	☐	☐	☐	☐
(2:62)	**B42.**	**Fighting the war in Vietnam was important to protect friendly countries**	☐	☐	☐	☐
(2:63)	**B43.**	**Fighting the war in Vietnam was important to show other nations that we keep our promises**	☐	☐	☐	☐

Now we'd like to learn your opinions about the way people of different races get along in America, and how you would like things to be. Try to check the answers that tell how you really feel. If there is any question that you don't want to answer, just leave it blank.

Do you agree or disagree with the following statements? (CHECK ONE BOX FOR EACH QUESTION)

			Agree (1)	Agree mostly (2)	Disagree mostly (3)	Disagree (4)
(2:64)	B44.	The government in Washington should see to it that white and black children are allowed to go to the same schools if they want to	☐	☐	☐	☐
(2:65)	B45.	The government in Washington should see to it that people are treated fairly and equally in jobs, no matter what their race may be	☐	☐	☐	☐
(2:66)	B46.	It is not the government's business to pass laws about equal treatment for all races	☐	☐	☐	☐

(2:67) **B47.** Suppose you had a job where your supervisor was a qualified person of a different race (white, black). Would you mind that a lot, a little, or not at all?

☐ (1) A lot
☐ (2) A little
☐ (3) Not at all

(2:68) **B48.** If a family of a different race (but same level of education and income) moved next door to you, how would you feel about it?

☐ (1) I'd mind it a lot
☐ (2) I'd mind it a little
☐ (3) I wouldn't mind it at all

(2:69) **B49.** If you have small children now or later on, would you rather they had only white friends, only black friends, or both?

☐ (1) I'd like them to have only white friends
☐ (2) I'd like them to have only black friends
☐ (3) I'd like them to have both black and white friends

(2:70) **B50.** Do you think that very many blacks miss out on jobs and promotions because of racial discrimination?

☐ (1) Many
☐ (2) Some
☐ (3) Only a few
☐ (4) None at all

(2:71) **B51.** Do you think that many blacks miss out on good housing because white owners will not rent or sell to them?

☐ (1) Many
☐ (2) Some
☐ (3) Only a few
☐ (4) None at all

(2:72) **B52.** Do you think that many blacks miss out on good schooling because of racial discrimination?

☐ (1) Many
☐ (2) Some
☐ (3) Only a few
☐ (4) None at all

SECTION C

WORK EXPERIENCE

Please answer the following questions about your present, or your most recently held, job. If you hold (did) more than one job, answer only for the most important job.

(3:21-23) C1 What kind of work do you (did you) do? ____________________

____

____

(3:24-25) C1a In what kind of business or industry is (was) this job? ____________________

____

(3:26) C1b Do you (did) you work for yourself or someone else?

☐ (1) Self
☐ (2) Someone else

(3:27-28) C2 About how many hours a week do you (did you) work on this job? __________

(3:29-32) C3 What is (was) your hourly wage? $__________ per hour

(3:33-36) C3a (OR $__________ per week)

(3:37-41) C3b (OR $__________ per month)

(3:42-45) C4 When did you enter this job? ____________________ (month, year)

The next four questions refer to the entire 52-week period from January 1, 1973 to December 31, 1973.

(3:46-47) C5 How much did you earn from working (salary, wages, tips, commissions) in the entire year of 1973 (before taxes)?

☐ (01) $0
☐ (02) $1 – 999
☐ (03) $1,000 – 1,999
☐ (04) $2,000 – 2,999
☐ (05) $3,000 – 3,999
☐ (06) $4,000 – 4,999
☐ (07) $5,000 – 5,999
☐ (08) $6,000 – 6,999
☐ (09) $7,000 – 7,999
☐ (10) $8,000 – 8,999
☐ (11) $9,000 – 9,999
☐ (12) $10,000 – 10,999
☐ (13) $11,000 – 11,999
☐ (14) $12,000 – 14,999
☐ (15) $15,000 – 19,999
☐ (16) $20,000 – 24,999
☐ (17) $25,000 – 34,999
☐ (18) $35,000 and above

(3:48-49) C6. In how many different weeks did you work either full- or part-time in this period (not counting work around the house)? Count any week where you did any work at all and include paid vacations and paid sick leave.

__________ Number of weeks

(3:50-51) C7. How many weeks during this period did you spend looking for work or on lay-off from a job?

__________ Number of weeks

(3:52) C8. How many different employers did you work for altogether during this period? (Count each employer only once, even if you had different jobs for the same employer.)

__________ Number of employers in 1973

(3:53-54) C9 Now, about how many different employers (that is, different companies or organizations or individual employers) have you worked for on *full-time* jobs since summer, 1969? (If you are not sure, guess) Do not include jobs held just in the summer when you were in school.

__________ Number of employers since summer, 1969

(3:55) C10. Do you have any health problems or physical conditions that limit in any way the amount or kind of work you can do?

☐ (1) Yes (EXPLAIN) ____________________
☐ (2) No

SECTION D

MILITARY EXPERIENCE

(4:21) **D1.** **Are you now or have you ever been a member of the Armed Forces?**

☐ (1) Yes
☐ (2) No → **GO TO NEXT PAGE, QUESTION E1**

(4:22) **D2.** **What branch of the Armed Forces were (are) you in?**

☐ (1) Army
☐ (2) Navy
☐ (3) Marine Corps
☐ (4) Air Force
☐ (5) Reserves (any branch)
☐ (6) National Guard
☐ (7) Coast Guard
☐ (8) ROTC

(4:23) **D3.** **Were you drafted?**

☐ (1) Yes
☐ (3) No
☐ (5) No, but I would have been if I hadn't enlisted

(4:24-27) (4:28-31) **D4.** **When did you serve on active duty (don't count Reserves, National Guard, or ROTC)?**

From ______________________ to ______________________ (If still on active duty, please fill in date you expect to complete your active duty)
Month, Year **Month, Year**

(4:32-33) **D5.** **What is the highest rank you reached in the Armed Forces?**

____

(4:34) **D6.** **Did you serve in Vietnam?**

☐ (1) Yes
☐ (2) No

(4:35-36) **D6a.** **For how many months?** ________________ **(Number of months)**

(4:37) **D7.** **All things considered, how satisfied are you with the work you were (are) doing in the military service?**

☐ (1) Very satisfied
☐ (2) Quite satisfied
☐ (3) Somewhat satisfied
☐ (4) Not very satisfied
☐ (5) Not at all satisfied

SECTION E

EDUCATIONAL EXPERIENCE

(4:38) **E1.** **How many years of schooling have you completed?**

☐ (1) 10
☐ (2) 11
☐ (3) 12
☐ (4) 13
☐ (5) 14
☐ (6) 15
☐ (7) 16
☐ (8) 17 or over

(4:39) **E2.** **Have you a high school diploma?**

☐ (1) Yes
☐ (9) No

(4:40) **E2a.** **Does the fact of not having a high school diploma seem to hinder you as far as getting a job is concerned?**

☐ (1) Yes, I've had a lot of trouble
☐ (3) Yes, I've had a little trouble
☐ (5) No

(4:41) **E2b.** **Does not having a high school diploma seem to hinder you as far as advancing on the job is concerned? (promotions, raises, etc.)**

☐ (1) Yes, a lot
☐ (3) Yes, a little
☐ (5) No

(4:42) **E3.** **What is the highest degree you have earned?**

☐ (1) Less than a high school diploma
☐ (2) High school diploma or equivalency (for example, G.E.D.)
☐ (3) Associate's degree
☐ (4) Bachelor's degree (or LL.B.)
☐ (5) Master's degree
☐ (6) Other graduate degree
☐ (7) Other (please specify) ______________________________

(4:43) **E4.** **Since leaving high school, have you attended any school like a college or university, service academy, business school, trade school, technical institute, vocational school, community college, and so forth?**

☐ (1) Yes **GO TO NEXT PAGE**
☐ (2) No **GO TO QUESTION F1, PAGE 16**

Please answer the following questions for your current school, or the school you most recently attended (unless you are a graduate student, in which case answer about the school where you received your Bachelor's degree).

[illegible] **E5. What is the exact name and location of the school you are (were) attending? (PLEASE PRINT AND DO NOT ABBREVIATE)**

School name ______________________________

City ____________________ State ____________

[illegible] **E6. When did you attend this school?**

Month, year ______________ to ______________ Month, year

[illegible] **E7. What kind of school is this?**

- ☐ (1) Vocational, trade, business or other career training school
- ☐ (2) Junior or community college
- ☐ (3) Four-year college or university
- ☐ (4) Other (please specify) ____________

[illegible] **E8. Roughly how many students are (were) enrolled at this school?**

- ☐ (1) 1 – 99
- ☐ (2) 100 – 499
- ☐ (3) 500 – 999
- ☐ (4) 1,000 – 2,999
- ☐ (5) 3,000 – 9,999
- ☐ (6) 10,000 – 19,999
- ☐ (7) over 20,000

[illegible] **E9. What is (was) your major field of study? (CHECK ONLY ONE BOX)**

ACADEMIC FIELDS (usually leading to at least a Bachelor's degree)

- ☐ (01) Biological sciences
- ☐ (02) Business
- ☐ (03) Education (elementary, special, physical, etc.)
- ☐ (04) Engineering
- ☐ (05) Humanities and Fine Arts (music, religion, English, etc.)
- ☐ (06) Physical Sciences and Mathematics
- ☐ (07) Social Sciences (psychology, history, etc.)
- ☐ (08) Other academic fields (please specify) ____________

VOCATIONAL AREAS (usually *not* leading to a Bachelor's degree)

- ☐ (09) Office and Clerical
- ☐ (10) Computer Technology
- ☐ (11) Mechanical and Engineering Technology
- ☐ (12) Health Services
- ☐ (13) Public Services (police science, food service, beautician, etc.)
- ☐ (14) Other vocational areas (please specify) ____________

[illegible] **E10. What is the average grade you received in your classes during your last year at this school? Putting them all together, how did your grades average out?**

- ☐ (01) A+ (97 to 100)
- ☐ (02) A (93 to 96)
- ☐ (03) A- (90 to 92)
- ☐ (04) B+ (87 to 89)
- ☐ (05) B (83 to 86)
- ☐ (06) B- (80 to 82)
- ☐ (07) C+ (77 to 79)
- ☐ (08) C (73 to 76)
- ☐ (09) C- (70 to 72)
- ☐ (10) D+ (67 to 69)
- ☐ (11) D (63 to 66)
- ☐ (12) D- (60 to 62)
- ☐ (13) E (F) – Failing

SECTION F

The next questions ask about your present (or most recently held) job. If you hold more than one job, answer only for the job you consider most important. If you are on active duty in the Armed Forces, consider that your job.

(5:21) **F1** All things considered, how satisfied are you with your work experience on your present (or most recent) job?

☐ (1) Very satisfied
☐ (2) Quite satisfied
☐ (3) Somewhat satisfied
☐ (4) Not very satisfied
☐ (5) Not at all satisfied

(5:22) **F2** How often do you get a chance to work with a supervisor in planning what your work will be – like what you will be doing, or how you should do it?

☐ (1) Almost always
☐ (2) Often
☐ (3) Sometimes
☐ (4) Seldom
☐ (5) Never

(5:23) **F3** How interesting is your job to you?

☐ (1) Very exciting and stimulating
☐ (2) Quite interesting
☐ (3) Fairly interesting
☐ (4) Slightly dull
☐ (5) Very dull

(5:24) **F4** How important do you think the things you are learning in your job are going to be for your later life?

☐ (1) Very important
☐ (2) Quite important
☐ (3) Fairly important
☐ (4) Slightly important
☐ (5) Not at all important

(5:25) **F5** What I have learned in high school helps me do better on my job.

☐ (1) Very true
☐ (2) Somewhat true
☐ (3) Not at all true

(5:26) **F6** I could do my present (or most recent) job just as well without any high school education.

☐ (1) Very true
☐ (2) Somewhat true
☐ (3) Not at all true

In an earlier section, we asked you some questions about the kind of job you'd like to have. Here are some questions about your present job – how true is each of the following statements for the job you have now? (or for your most recent job, if you don't have a job now.)

How true is this for your present (most recent) job?

			Very true (1)	Pretty true (2)	A little true (3)	Not at all true (4)
(5:27)	F7	There's no one to boss me on the work.	☐	☐	☐	☐
(5:28)	F8	It is steady, no chance of being laid off.	☐	☐	☐	☐
(5:29)	F9	I can learn new things, learn new skills.	☐	☐	☐	☐
(5:30)	F10	I don't have to work too hard.	☐	☐	☐	☐
(5:31)	F11	It is a clean job, where I don't get dirty.	☐	☐	☐	☐
(5:32)	F12	It has good chances for getting ahead.	☐	☐	☐	☐
(5:33)	F13	I don't have to take a lot of responsibility.	☐	☐	☐	☐
(5:34)	F14	It leaves me a lot of free time to do what I want to do.	☐	☐	☐	☐
(5:35)	F15	The pay is good.	☐	☐	☐	☐
(5:36)	F16	It is a job that my friends think a lot of – has class.	☐	☐	☐	☐
(5:37)	F17	It uses my skills and abilities – lets me do the things I can do best.	☐	☐	☐	☐
(5:38)	F18	There are nice friendly people to work with.	☐	☐	☐	☐
(5:39)	F19	It doesn't make me learn a lot of new things.	☐	☐	☐	☐

SECTION G

Now we'd like to ask you some questions about your long-range occupational plans.

[illegible] G1 In the long run, what sort of work do you think you might do for a living? (PLEASE WRITE IN – SAY AS MUCH AS YOU CAN ABOUT THE SORT OF JOB YOU EXPECT TO HAVE.)

____

____

____

____

[illegible] G2 How certain are you that the work you plan to do is a good choice for you?

☐ (1) Completely certain
☐ (2) Very certain
☐ (3) Fairly certain
☐ (4) Somewhat certain
☐ (5) Not at all certain

[illegible] G3 How satisfying do you think you will find this kind of work?

☐ (1) Not very satisfying
☐ (2) Somewhat satisfying
☐ (3) Quite satisfying
☐ (4) Very satisfying
☐ (5) Extremely satisfying

[illegible] G4 Fifteen years from now, if you are doing this type of work, about how much do you expect you will be earning? Assume that the value of the dollar will be the same.

☐ (1) Less than $3,000 a year
☐ (2) $3,000 – $5,000
☐ (3) $5,000 – $7,500
☐ (4) $7,500 – $10,000
☐ (5) $10,000 – $15,000
☐ (6) $15,000 – $25,000
☐ (7) More than $25,000 a year

Please account for your activities since 1969 by marking all activities that apply to you in each row. (CHECK AT LEAST ONE BOX IN EACH ROW)

		STUDENT		MILITARY SERVICE		EMPLOYED		UNEMPLOYED		OTHER (SPECIFY)
		full time	part time	full time	part time	full time	part time	full time	part time	
G5	Summer, 1969	☐	☐	☐	☐	☐	☐	☐	☐	______
G6	Sept., 1969 – May, 1970	☐	☐	☐	☐	☐	☐	☐	☐	______
G7	Summer, 1970	☐	☐	☐	☐	☐	☐	☐	☐	______
G8	Sept., 1970 – May, 1971	☐	☐	☐	☐	☐	☐	☐	☐	______
G9	Summer, 1971	☐	☐	☐	☐	☐	☐	☐	☐	______
G10	Sept., 1971 – May, 1972	☐	☐	☐	☐	☐	☐	☐	☐	______
G11	Summer, 1972	☐	☐	☐	☐	☐	☐	☐	☐	______
G12	Sept., 1972 – May, 1973	☐	☐	☐	☐	☐	☐	☐	☐	______
G13	Summer, 1973	☐	☐	☐	☐	☐	☐	☐	☐	______
G14	Sept., 1973 – May, 1974	☐	☐	☐	☐	☐	☐	☐	☐	______

SECTION H

This section deals with activities which may be against the rules or against the law. For the most part, these are questions we have asked you in past interviews about an earlier stage in your life. Now we want to ask you about your more recent experiences.

We hope you will answer all of these questions. However, if you find a question which you cannot answer honestly, we would prefer that you leave it blank. Remember, only the research staff will see your answers. Your answers will never be connected with your name — they cannot be traced back to you as an individual.

Here are a number of things which you might do that could get you into trouble. Please tell us how many times you have done these things in the last year. For each question, put a check in the box next to the answer that is true for you.
(CHECK ONE BOX ON EACH LINE)

			5 or more times (1)	3 or 4 times (2)	Twice (3)	Once (4)	Never (5)
(6:21)	H1.	Gotten into a serious fight in school or at work	☐	☐	☐	☐	☐
(6:22)	H2.	Taken something not belonging to you worth under $50	☐	☐	☐	☐	☐
(6:23)	H3.	Went onto someone's land or into some house or building when you weren't supposed to be there	☐	☐	☐	☐	☐
(6:24)	H4.	Set fire to someone else's property on purpose	☐	☐	☐	☐	☐
(6:25)	H5.	Gotten something by telling a person something bad would happen to him if you didn't get what you wanted	☐	☐	☐	☐	☐
(6:26)	H6.	Argued or had a fight with either of your parents	☐	☐	☐	☐	☐
(6:27)	H7.	Gotten into trouble with police because of something you did	☐	☐	☐	☐	☐
(6:28)	H8.	Hurt someone badly enough to need bandages or a doctor	☐	☐	☐	☐	☐
(6:29)	H9.	Damaged school property on purpose	☐	☐	☐	☐	☐
(6:30)	H10.	Damaged property at work on purpose	☐	☐	☐	☐	☐
(6:31)	H11.	Taken something from a store without paying for it	☐	☐	☐	☐	☐
(6:32)	H12.	Hit an instructor or supervisor	☐	☐	☐	☐	☐

In the last year, how how often have you done this?

			5 or more times (1)	3 or 4 times (2)	Twice (3)	Once (4)	Never (5)
(6:33)	H13.	Taken a car that didn't belong to someone in your family without permission of the owner	☐	☐	☐	☐	☐
(6:34)	H14.	Taken an expensive part of a car without permission of the owner	☐	☐	☐	☐	☐
(6:35)	H15.	Taken part in a fight where a bunch of your friends are against another bunch	☐	☐	☐	☐	☐
(6:36)	H16.	Taken something not belonging to you worth over $50	☐	☐	☐	☐	☐
(6:37)	H17.	Taken an inexpensive part of a car without permission of the owner	☐	☐	☐	☐	☐
(6:38)	H18.	Used a knife or gun or some other thing (like a club) to get something from a person	☐	☐	☐	☐	☐

The rest of this section deals with drugs. This study has already made a considerable contribution to our knowledge about drugs because of your cooperation in the past, and we hope you can help us again. However, if you find a question which you cannot answer honestly, we would prefer that you leave it blank.
(CHECK ONE BOX ON EACH LINE)

			All (1)	Most (2)	Some (3)	A few (4)	None (5)
	H19.	How many of your friends would you estimate					
(6:39)	a.	smoke cigarettes?	☐	☐	☐	☐	☐
(6:40)	b.	smoke marijuana (pot, grass) or hashish?	☐	☐	☐	☐	☐
(6:41)	c.	take amphetamines (pep pills, bennies, speed, uppers)?	☐	☐	☐	☐	☐
(6:42)	d.	take methaqualone (quads, quaaludes)?	☐	☐	☐	☐	☐
(6:43)	e.	take barbiturates (yellow jackets, red devils, downers)?	☐	☐	☐	☐	☐
(6:44)	f.	take heroin (smack, "H")?	☐	☐	☐	☐	☐
(6:45)	g.	take hallucinogens (LSD, mescaline, peyote, etc.)?	☐	☐	☐	☐	☐
(6:46)	h.	take cocaine?	☐	☐	☐	☐	☐
(6:47)	i.	drink alcoholic beverages (liquor, beer, wine)?	☐	☐	☐	☐	☐

H20. How often have you done this during part or all of the *last year* for other than medical reasons?

			Nearly every day (1)	Once or twice a week (2)	Once or twice a month (3)	3 to 10 times a year (4)	Once or twice a year (5)	Never (6)
(6:48)	a.	Smoked cigarettes	☐	☐	☐	☐	☐	☐
(6:49)	b.	Smoked marijuana (pot, grass) or hashish	☐	☐	☐	☐	☐	☐
(6:50)	c.	Taken amphetamines (pep pills, bennies, speed, uppers).	☐	☐	☐	☐	☐	☐
(6:51)	d.	Taken methaqualone (quads, quaaludes).	☐	☐	☐	☐	☐	☐
(6:52)	e.	Taken barbiturates (yellow jackets, red devils, downers).	☐	☐	☐	☐	☐	☐
(6:53)	f.	Taken heroin (smack, "H")	☐	☐	☐	☐	☐	☐
(6:54)	g.	Taken hallucinogens (LSD, mescaline, peyote, etc.)	☐	☐	☐	☐	☐	☐
(6:55)	h.	Taken cocaine	☐	☐	☐	☐	☐	☐
(6:56)	i.	Used alcoholic beverages (liquor, beer, wine)	☐	☐	☐	☐	☐	☐
(6:57)	j.	Used wine, specifically	☐	☐	☐	☐	☐	☐
(6:58)	k.	Used beer	☐	☐	☐	☐	☐	☐
(6:59)	l.	Used hard liquor	☐	☐	☐	☐	☐	☐

H21. Think back over the last *four* years – that is, since we last talked to you in the Spring of 1970. Now, for each drug, pick the one year since then in which you used it most often. *During that one year*, how often did you use that drug? (Do not include drug use for medical reasons.)

			Nearly every day (1)	Once or twice a week (2)	Once or twice a month (3)	3 to 10 times a year (4)	Once or twice a year (5)	Never (6)
(6:60)	a.	Smoked cigarettes	☐	☐	☐	☐	☐	☐
(6:61)	b.	Smoked marijuana (pot, grass) or hashish	☐	☐	☐	☐	☐	☐
(6:62)	c.	Taken amphetamines (pep pills, bennies, speed, uppers).	☐	☐	☐	☐	☐	☐
(6:63)	d.	Taken methaqualone (quads, quaaludes).	☐	☐	☐	☐	☐	☐
(6:64)	e.	Taken barbiturates (yellow jackets, red devils, downers).	☐	☐	☐	☐	☐	☐
(6:65)	f.	Taken heroin (smack, "H")	☐	☐	☐	☐	☐	☐
(6:66)	g.	Taken hallucinogens (LSD, mescaline, peyote, etc.)	☐	☐	☐	☐	☐	☐
(6:67)	h.	Taken cocaine	☐	☐	☐	☐	☐	☐
(6:68)	i.	Used alcoholic beverages (liquor, beer, wine)	☐	☐	☐	☐	☐	☐

People differ in how they feel about individuals doing certain things. How do you feel about people your age doing each of the following?
(CHECK ONE BOX ON EACH LINE)

			Strongly approve (1)	Approve (2)	I feel neutral (3)	Disapprove (4)	Strongly disapprove (5)	I CAN'T SAY, UNFAMILIAR WITH DRUG (6)
(7:21)	H22.	Smoking one or more packs of cigarettes per day . . .	☐	☐	☐	☐	☐	☐
(7:22)	H23.	Trying marijuana (pot, grass) once or twice	☐	☐	☐	☐	☐	☐
(7:23)	H24.	Smoking marijuana occasionally	☐	☐	☐	☐	☐	☐
(7:24)	H25.	Smoking marijuana regularly	☐	☐	☐	☐	☐	☐
(7:25)	H26.	Trying LSD once or twice	☐	☐	☐	☐	☐	☐
(7:26)	H27.	Taking LSD regularly	☐	☐	☐	☐	☐	☐
(7:27)	H28.	Trying heroin (smack, "H") once or twice	☐	☐	☐	☐	☐	☐
(7:28)	H29.	Taking heroin occasionally	☐	☐	☐	☐	☐	☐
(7:29)	H30.	Taking heroin regularly	☐	☐	☐	☐	☐	☐
(7:30)	H31.	Trying a barbiturate (yellow jacket, red devil, downer) once or twice	☐	☐	☐	☐	☐	☐
(7:31)	H32.	Taking barbiturates regularly	☐	☐	☐	☐	☐	☐
(7:32)	H33.	Trying an amphetamine (pep pill, bennie, speed, upper) once or twice	☐	☐	☐	☐	☐	☐
(7:33)	H34.	Taking amphetamines regularly	☐	☐	☐	☐	☐	☐
(7:34)	H35.	Trying alcoholic beverages (liquor, beer, wine) once or twice	☐	☐	☐	☐	☐	☐
(7:35)	H36.	Drinking alcoholic beverages regularly	☐	☐	☐	☐	☐	☐
(7:36)	H37.	Trying cocaine once or twice	☐	☐	☐	☐	☐	☐

H38. Sometimes people use drugs and don't get high – sometimes they do. How often have you *actually gotten high* on each drug during the last year?

			Nearly every day (1)	Once or twice a week (2)	Once or twice a month (3)	3 to 10 times a year (4)	Once or twice a year (5)	Never (6)
(7:37)	a.	marijuana or hashish	☐	☐	☐	☐	☐	☐
(7:38)	b.	amphetamines	☐	☐	☐	☐	☐	☐
(7:39)	c.	methaqualone (quaaludes)	☐	☐	☐	☐	☐	☐
(7:40)	d.	barbiturates	☐	☐	☐	☐	☐	☐
(7:41)	e.	heroin	☐	☐	☐	☐	☐	☐
(7:42)	f.	hallucinogens	☐	☐	☐	☐	☐	☐
(7:43)	g.	cocaine	☐	☐	☐	☐	☐	☐
(7:44)	h.	alcoholic beverages (liquor, beer, wine) . . .	☐	☐	☐	☐	☐	☐
(7:45)	i.	wine, specifically	☐	☐	☐	☐	☐	☐
(7:46)	j.	beer	☐	☐	☐	☐	☐	☐
(7:47)	k.	hard liquor	☐	☐	☐	☐	☐	☐

(7:48) H39. How difficult do you think it would be for you to get marijuana (pot, grass) if you wanted some?

☐ (1) Probably impossible
☐ (2) Very difficult
☐ (3) Fairly difficult
☐ (4) Fairly easy
☐ (5) Very easy

(7:49) H40. How difficult do you think it would be for you to get heroin (smack, "H") if you wanted some?

☐ (1) Probably impossible
☐ (2) Very difficult
☐ (3) Fairly difficult
☐ (4) Fairly easy
☐ (5) Very easy

(8:21) **H41.** **Have you ever had any drug education courses or lectures since leaving high school?**

☐ (1) No, and I wish I had
☐ (2) No, and I'm glad I didn't
☐ (3) Yes, and it was of some value
☐ (4) Yes, but it was of little or no value

(8:22) **H42.** **Have you ever wanted to get professional help for a problem with your own use of drugs (including alcohol)?** (CHECK ONLY ONE)

☐ (1) No
☐ (2) Yes, and I did get help
☐ (3) Yes, but I didn't know where to go
☐ (4) Yes, but I didn't get help

(8:23) **H43.** **Have you ever felt in your own mind that you should *reduce* or *stop* your use of alcohol, cigarettes, or any other drug listed below?**

☐ (1) No
☐ (2) Yes → **CHECK WHICH DRUG(S)**

(8:24) ☐ a. **Cigarettes**
(8:25) ☐ b. **Marijuana**
(8:26) ☐ c. **Amphetamines**
(8:27) ☐ d. **Methaqualone (quaaludes)**
(8:28) ☐ e. **Barbiturates**
(8:29) ☐ f. **Heroin**
(8:30) ☐ g. **Hallucinogens**
(8:31) ☐ h. Cocaine
(8:32) ☐ i. **Alcohol**

(8:33) **H44.** **Have you ever been arrested for possession or sale of an illegal drug?**

☐ (1) No
☐ (2) Yes

(8:34) **H45.** **How likely do you think it is that you will use marijuana at some time in the future?**

☐ (1) I definitely will
☐ (2) I probably will
☐ (3) I probably will not
☐ (4) I definitely will not

(8:35) **H46.** **If [illegible] were legal and available, I would probably:**

☐ [illegible] it
☐ (2) Use it more than I do now
☐ (3) Use it less than I do now
☐ (4) Use it about as often as I do now
☐ (5) Not use it even if it were legal
☐ (6) Don't know

H47. **Here are some reasons people give for not using marijuana, or for stopping use. If you have *never* used marijuana, or if you have *stopped* using it, please tell us which reasons are true for you.** (CHECK ALL THAT APPLY)

(8:36) ☐ **I am currently using it, question does not apply to me.**

(8:37) ☐ a. **Hard to get**
(8:38) ☐ b. **Concerned about possible psychological damage**
(8:39) ☐ c. **Concerned about possible physical damage**
(8:40) ☐ d. **Concerned about getting arrested**
(8:41) ☐ e. **Concerned about becoming addicted to marijuana**
(8:42) ☐ f. **It's against my beliefs**
(8:43) ☐ g. **Concerned about loss of energy or ambition**
(8:44) ☐ h. **Concerned about possible loss of control of myself**
(8:45) ☐ i. **It might lead to stronger drugs.**
(8:46) ☐ j. **Not enjoyable**
(8:47) ☐ k. **My parents would disapprove**
(8:48) ☐ l. **My wife or girlfriend would disapprove**
(8:49) ☐ m. **I don't like being with the people who use it**
(8:50) ☐ n. **My friends don't use it**
(8:51) ☐ o. **I might have a bad trip**
(8:52) ☐ p. **Other (please specify)**____________________________

H48. **Which of the following best describes your parents' (or guardians') cigarette use during the time you were growing up?**

(8:53) **A. Mother** . . .
- ☐ (1) Never smoked cigarettes
- ☐ (2) Smoked only occasionally
- ☐ (3) Was a regular smoker, but quit
- ☐ (4) Was a regular smoker
- ☐ (5) Doesn't apply or don't know

(8:54) **B. Father** . . .
- ☐ (1) Never smoked cigarettes
- ☐ (2) Smoked only occasionally
- ☐ (3) Was a regular smoker, but quit
- ☐ (4) Was a regular smoker
- ☐ (5) Doesn't apply or don't know

H49. **How would you describe your parents' use of alcohol during the time you were growing up?**

(8:55) **A. Mother** . . .
- ☐ (1) Never drank
- ☐ (2) Light drinker
- ☐ (3) Moderate drinker
- ☐ (4) Heavy drinker
- ☐ (5) Doesn't apply or don't know

(8:56) **B. Father** . . .
- ☐ (1) Never drank
- ☐ (2) Light drinker
- ☐ (3) Moderate drinker
- ☐ (4) Heavy drinker
- ☐ (5) Doesn't apply or don't know

H50. **During the time you were growing up, how often did either of your parents use the kinds of pills we now call uppers or downers (for example, sleeping pills, tranquilizers, amphetamines, or barbiturates)?**

(8:57) **A. Mother used them** . . .
- ☐ (1) Never
- ☐ (2) Almost never
- ☐ (3) Sometimes
- ☐ (4) Often
- ☐ (5) Doesn't apply or don't know

(8:58) **B. Father used them** . . .
- ☐ (1) Never
- ☐ (2) Almost never
- ☐ (3) Sometimes
- ☐ (4) Often
- ☐ (5) Doesn't apply or don't know

SECTION J

We'd like to ask you a few questions about your current and future family plans.

(9:21) **J1.** **What is your marital status?**
- ☐ (1) Single → GO TO QUESTION J2
- ☐ (2) Married with one or more children → GO TO QUESTION J4
- ☐ (3) Married with no children → GO TO QUESTION J8
- ☐ (4) Divorced or separated with one or more children → GO TO QUESTION J4
- ☐ (5) Divorced or separated with no children → GO TO QUESTION J8

FOR THOSE WHO ARE SINGLE:

(9:22) **J2.** **When do you think you are most likely to get married?**
- ☐ (1) Within the next year or so
- ☐ (2) In 2 – 3 years
- ☐ (3) In 4 – 5 years
- ☐ (4) Over 5 years from now
- ☐ (5) I don't expect to get married

(9:23) **J3.** **How long after getting married do you think a couple should wait before trying to have their first child?**
- ☐ (1) Shouldn't wait at all
- ☐ (2) One year
- ☐ (3) Two years
- ☐ (4) Three years
- ☐ (5) Four or five years
- ☐ (6) Over five years

GO TO QUESTION J12

FOR THOSE WHO HAVE ONE OR MORE CHILDREN:

(9:24) **J4.** **How many children do you have?**
- ☐ (1) One
- ☐ (2) Two
- ☐ (3) Three
- ☐ (4) Four or more

(9:25) **J5.** **What is the sex of your *first* child?**
- ☐ (1) Male
- ☐ (2) Female

(9:26-28) **J6.** **When was your child born?** ________________, ________
MONTH YEAR

(9:30) J7. Did you and your wife plan on having your first child at that time?

☐ (1) Yes, we were trying to have a child
☐ (2) No, we were trying to avoid a pregnancy at that time
☐ (3) We weren't trying either way

GO TO QUESTION J10

FOR THOSE WHO ARE MARRIED, SEPARATED, OR DIVORCED WITH NO CHILDREN

(9:31) J8. Is your wife currently expecting a child?

☐ (1) Yes
☐ (2) No

(9:32-33) J8a. When is the baby expected? ____________________
MONTH

(9:34) J8b. Did you and your wife plan this pregnancy?

☐ (1) Yes, we were trying to have a child
☐ (2) No, we were trying to avoid a pregnancy at the time
☐ (3) We weren't trying either way

GO TO QUESTION J10

(9:35) J9. When do you think you're most likely to have your first child?

☐ (1) We're trying to have a baby now
☐ (2) About one year or so from now
☐ (3) About two years from now
☐ (4) About three or four years from now
☐ (5) Five or more years from now
☐ (6) Never
☐ (7) Doesn't apply to me

FOR ALL WHO ARE MARRIED, SEPARATED, OR DIVORCED:

J10. Did you decide to delay having a first child for any of the following reasons?
(CHECK ALL THAT APPLY)

(9:36) ☐ a. No, we didn't decide to delay a first child
(9:37) ☐ b. Yes, because we couldn't afford to have a child
(9:38) ☐ c. Yes, because I wanted to finish my education
(9:39) ☐ d. Yes, because my wife wanted to finish her education
(9:40) ☐ e. Yes, because my wife was interested in developing her career
(9:41) ☐ f. Yes, because we wanted to get to know each other before we had a child
(9:42) ☐ g. Yes, because we wanted to enjoy our life together before being tied down by a child

(9:43-46) J11. When did you get married? ____________, ____________
MONTH YEAR

THE NEXT QUESTIONS ARE FOR EVERYONE. THEY ASK ABOUT HAVING CHILDREN.

(9:47) J12. Have you thought at all about whether you'd like to have children or how many you'd like to have?

☐ (1) I've thought about it a lot
☐ (2) I've thought about it a little
☐ (3) I have not thought about it at all

(9:48) J13. Have you talked with anyone, such as your parents, friends, or wife about how many children to have?

☐ (1) Yes
☐ (2) No

(9:49) J14. What is the *largest* number of children you would choose to have?

____________ children
NUMBER

(9:50) J15. How certain do you feel that this is the largest number of children you would choose to have?

☐ (1) Quite certain or sure
☐ (2) Moderately certain
☐ (3) Not at all certain

(9:51) J16. What is the smallest number of children you would choose to have?

____________ children
NUMBER

(9:52) J17. How certain do you feel that this is the smallest number of children you would choose to have?

☐ (1) Quite certain or sure
☐ (2) Moderately certain
☐ (3) Not at all certain

People have different reasons for wanting a certain number of children. Please read each reason below and check how important it is in *your own thinking* about how many children to have.

Don't just check VERY IMPORTANT for everything. Try to think what things really matter to you, and what things really aren't that important.

How important is this for you?

			Very important (1)	Pretty important (2)	A little important (3)	Not important (4)
(9:53)	J18	I want a family – at least one child.	☐	☐	☐	☐
(9:54)	J19.	I want more than one child because an only child is likely to be spoiled.	☐	☐	☐	☐
(9:55)	J20.	I want at least one boy and one girl.	☐	☐	☐	☐
(9:56)	J21.	Having more children means they can get more companionship and help from each other.	☐	☐	☐	☐
(9:57)	J22.	Having fewer children helps avoid overpopulation. . . .	☐	☐	☐	☐
(9:58)	J23.	Having fewer children means a better life together for the husband and wife.	☐	☐	☐	☐
(9:59)	J24.	Having fewer children means each child gets more love and attention from the parents.	☐	☐	☐	☐
(9:60)	J25.	Having children costs a lot of money.	☐	☐	☐	☐

(9:61) J26 * All things considered, if you could have exactly the number of children you want, what number would that be? (GIVE A SINGLE NUMBER)

______________ children
NUMBER

(9:62) J26a. How many boys? __________ boy(s)
NUMBER

(9:63) J26b. How many girls? __________ girl(s)
NUMBER

This section presents a number of important issues. Some of the issues are controversial, so if you find particular questions which you would rather not answer, just leave them blank and go on with the rest.

We would like you to indicate whether you agree or disagree with each statement.
(CHECK ONE BOX ON EACH LINE)

			Agree (1)	Mostly agree (2)	Mostly disagree (3)	Disagree (4)
(9:64)	J27.	High schools should offer instruction in birth control methods. . .	☐	☐	☐	☐
(9:65)	J28.	A woman should be permitted to have an abortion at any time during the first three months of pregnancy.	☐	☐	☐	☐
(9:66)	J29.	A couple should have as many children as they want, without worrying about increasing population.	☐	☐	☐	☐
(9:67)	J30.	There is no danger of overpopulation becoming a serious problem in the United States.	☐	☐	☐	☐
(9:68)	J31.	To prevent overpopulation, each couple has a responsibility to limit the number of children they have.	☐	☐	☐	☐
(9:69)	J32.	I feel strongly enough about preventing overpopulation that I'd be willing to limit my family to two children.	☐	☐	☐	☐

(9:70) J33. Turning now to a more general issue, what do you think would be the ideal population size for the United States?

- ☐ (1) Much smaller than it is now
- ☐ (2) Somewhat smaller than it is now
- ☐ (3) About the same as it is now
- ☐ (4) Somewhat larger than it is now
- ☐ (5) Much larger than it is now

(9:71) J34. What do you think would be the ideal population size for the entire world?

- ☐ (1) Much smaller than it is now
- ☐ (2) Somewhat smaller than it is now
- ☐ (3) About the same as it is now
- ☐ (4) Somewhat larger than it is now
- ☐ (5) Much larger than it is now

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